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## ORIGINAL ARTICLES

### JUVENILE DELINQUENCY AND PROBATION\*

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PROGRESS in this world is notoriously unsteady. If it be not actually spasmodic, it has, historically and habitually, its seasons of advance and of halt. By all tokens of the times, we have come to one of the rest periods. Conservatism has set in. Politically, financially, socially, the established order is being paid the higher respect. In public outlay, it expresses itself in a strong emphasis on economy. Reform has dropped out of the political vocabulary. Proposals that a few years ago would have won a determining support are rejected overwhelmingly. The recent treatment of the child-labor amendment is evidence of this state of the public mind. Current legislation is marked not alone by absence of new departures but by attacks upon the instruments for social service that were readily provided in more liberal and progressive years.

There is this ground of sympathy between those who are concerned in the socialization of the courts, corrections, and the administration of the criminal law generally and those who are enlisted in widening the applications of psychiatry, that both are being called somewhat sharply to account. In the correctional field, there is at this moment a reerudescence of reliance upon severe penalties. It comes as the reaction to the prevalence of certain violent disorders and may be said to have warrant; but it reveals, none the less, that the public mind easily reverts to methods that were supposed to have been discredited as to their efficacy. Under the momentary impulse, all the projects of dealing with the offender constructively, in the individual sense, came in for rebuke in an indiscriminating charge that they have weakened the foundation of the defenses of the law against disorder. If this were the topic for consideration at this moment, there would be somewhat to say as to the failures of severity in its current application. Following the recent imposition of extreme penalties, effectively broad-casted, and instructions to police officers to carry their guns ready for instant use, likewise widely announced, there came within thirteen days seventeen of the sort of daring crimes that were the direct objective of the

drastic actions of court and police. They were serious enough to win newspaper headlines, perhaps, however, that not being a measure of their atrocity. But that is not our theme. What is here to be noted is that there accompanies the panic a ready—because it is always ready,—challenging of any other than summary and extreme processes for the dealing with the offender of whatever kind. In the field your society represents, there are evidences that the public mind has become querulous if not antagonistic, examples of which questioning mood may be left for you to cite. In both fields, the front rank is having its difficulties.

The blessing of such a stay in advance, temporary as it doubtless is, will be found in the fact that it calls for self-examination, for re-assurance as to the security of the ground taken, for a new testing of the logic and, as well, the strategy of the advance. Because of the alliance between the profession, if it can be called such, of dealing with behavior and the profession which seeks the foundations of behavior, the challenge has a common interest.

A treatment of juvenile offenders differentiated from the traditional punitive one, which yields less readily to humane and remedial progress in the case of adults, is reasonably secure in law and practice. It is expressed in juvenile delinquency statutes, now common to the American states, and in the institution of juvenile courts for their administration. The juvenile court and the proceedings it must use are, first of all, marked by a discard of certain ancient reliances for correction. Privacy of hearing replaces the public trial, which has had and still has high valuation as an aid to community respect for law. Removal of the trappings of authority is required, going to the extreme of requirement that the hearings shall be held in rooms not at any time used for criminal trials, a unique, legal recognition of atmosphere. The plea as to guilt vanishes, on the probable theory that the arrival at the truth of the matter is not helped by an initial declaration and further that the final determination is not to be as to the offence but as to the condition of the offender. Provisions are definite as to the information to be provided the court, the list of re-

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quired subjects being entirely novel to criminal procedure. Further on, the remedies are broadened from prescribed penalties to include supervision by the court during its pleasure and, in the case of commitment, from the fixed term to the entire minority of the child.

These and the other like prescriptions are keyed to the declared intent of the special law. As phrased in the Massachusetts juvenile law, the theory is that the law shall be liberally construed so that the care, custody and discipline of the children brought before the court shall approximate as nearly as possible that which they should receive from their parents, and that, as far as practicable, they shall be treated, not as criminals, but as children in need of aid, encouragement and guidance. Proceedings against children under this law shall not be deemed criminal proceedings.

The court is thus unqualifiedly committed to parental responsibility. This is the key to the new order which the laws as to child-correction establish. Consistently its administration should have no more of a vestige of punishment than the normal and the intelligent parent would employ. Practically there may be summoned to mind some domestic penalties, such as physical chastisement, which the court may not employ, or would employ with a certainty of public disapproval. The great fact is that the public dealing with the child is changed from punishment to remedy. What such a change of base implies as to the information of the court and the aid of every available professional resource will be noted after the mention of another fundamental in the newer process.

The legal basis of all the special juvenile delinquency laws is that they seek to arrive at condition instead of conduct. Juvenile delinquency is not an offence—it is a state. In many of our statutes it is mingled, both as to the finding and as to the tribunal making it, with the condition of dependency and neglect. The courts which have been called to pass upon the consistency of these laws with the constitutional provisions as to personal liberty, the right to trial by jury and the like, have uniformly defended the different process on the ground that it seeks to arrive at condition and not to determine guilt and to inflict penalties. The right to appeal, when not provided in the juvenile statute has been denied on this theory, whenever tested. The proceedings, both in theory and in detail, partake of the nature of equity or chancery law; and this is true even though the jurisdiction is placed in the criminal courts.

Plainly, the provision of a process, non-criminal in its nature and its methods, for juvenile offenders within a prescribed age, makes no distinction as to the nature or degree of the offence. But the law-makers have not always been ready to give its operation full sweep. The Massachusetts statute makes exception of offences pun-

ishable by death or life imprisonment. Certain other states have not excepted even these. Moreover the court with juvenile jurisdiction is permitted to waive its delinquency authority and let the case proceed as under the criminal law. The theory of condition vanishes in the case of the boy murderer and may be avoided as to any offence. In other states the juvenile court may exercise the same option by transfer of the case to the criminal court,—a difference in terms only. Here opinion varies. Certain of the authoritative juvenile judges hold there should be no transfer, and will proceed with the juvenile offender who has committed an atrocious offence. Their view is consistent with the theory of dealing with a condition and not a crime. Massachusetts, out of caution, has preserved by statute the appeal—bringing the possibility of a jury trial on a question of delinquency. It is a concession to the idea, discredited in general, that a jury should pass upon an issue of a person's condition—as in the issue as to insanity for example. Massachusetts' acceptance of the distinctive chancery principle as to child offenders is a qualified one; it would be complete only as it denied transfer at the court's option and denied appeal.

These observations may seem technical, deserving discussion only in the circles of strictly judicial interest. They can serve here only by their light and shade,—their affirmations and their exceptions,—to emphasize the consummate fact that the juvenile delinquency law and courts have their sole *raison d'être* in the search for the causation of offence and the application of the indicated treatment.

To say this is to establish at once a relationship with the interest represented in a psychiatric society. Here is a relationship that is ardently acknowledged wherever there is an intelligent effort on the part of the juvenile court to do its duty,—to fulfill its purpose,—to justify its existence. Sadly enough, it is one that quite too prevalently is not conceded or leastwise not made avail of. To know condition, in the one who by way of offence has fallen within the attention of police and court, is not conceivably possible without the employment of the skill of the expert in the field of mentality.

The juvenile court nowhere exists without probation. To be sure, probation was not originally a juvenile device. It was fully established in Massachusetts as an additional power given the criminal courts years before the Boston Juvenile Court was established and the juvenile delinquency law enacted—both of these in 1906. But it was given a more distinct application, its scope and its methods defined as a feature of the special laws as to children. Probation was of Massachusetts origin,—the juvenile court was not. The recent celebration of the twenty-fifth anniversary of the Chicago court recalled the time and place of beginning of the special court.

The adoption of probation in many of the states has accompanied the arrival of the juvenile court and is limited to juvenile offenders.

Probation is a power given the courts, a clear addition to their instrumentalities for dealing with the offenders, after conviction—or in the case of juveniles, of a finding of delinquency or waywardness. In Massachusetts it is unqualified. Its employment is entirely at the discretion of the court,—as to whether it shall be employed in any case and on what terms and conditions. Its companion, the suspension of the execution of sentence, is another unqualified power given all the criminal courts in Massachusetts. Not until the present week has there been a limit set upon its use. The warrantable concern over drunken drivers has led to the unwarranted denial of the use of the suspended sentence as to second offenders of this kind—unwarranted because it marks the infringement upon a power of the court which in its very nature should rest in their discretion.

The change of base in the dealing with juvenile delinquents has deeply affected the methods of the adult criminal courts. The study of the individual, the effort to arrive at condition and to prescribe needed treatment, engages attention in the criminal court to an extent that the judiciary itself would hardly realize. The bench has developed an appetite for knowledge as to the culprit that calls to its satisfaction expert opinion from every available quarter. Here, to be sure, is encountered the traditional reliance upon prescribed penalties, the clinging to old-time estimates of the value of deterrence, the dependence upon fear as the main hope of obedience to law: but all these are being qualified,

out of humanity, out of realization that punishment is perilous as a sole reliance, and out of recognition of the social prudence of such treatment of the individual at bar as will be either restorative or restraining as his condition demands.

In a survey of the results of probation completed last year, the study of careers of persons who were granted it for offences some ten years ago, there was demonstrated the fact that it had been justified. Among adults sixty-five per cent had not again been in court. Aside from those who were surrendered to the court during the probation term for failure to live up to its conditions, seventy-seven per cent had not again been in courts, and ninety-seven per cent had not at any time been committed to an institution. Among juveniles, no repetition of offence, after discharge from probation, occurred as to fifty-six per cent and the repetitions were during juvenile years—an average of four years in the lives of these beyond the juvenile court age revealing that there had been no substantial contribution to adult crime by those who were carried through a juvenile probation term.

The juvenile court, as we have it, is perhaps only a post in advance of ground previously occupied, not the goal. It is shackled to the criminal court equipment and in spite of the statutory proclamation of its parental design, it has not yet fully occupied the ground marked out for it. It had to come as a device for the mitigation of the indiscriminate dealing with offenders against the law. The one fortune that results from its continued alliance with the old institution is that the traditions there are being called in question as a result of the contact. The child is leading.

## RESPONSIBILITY—THE MEDICAL POINT OF VIEW

BY ABRAHAM MYERSON, M.D.

THAT crime is only in part a psychiatric problem, ought to be a truism, and such a statement would probably be so regarded by jurists, lawyers, and the bulk of non-psychiatrists. There is, however, a growing tendency on the part of psychiatrists to feel and claim that their training and discipline makes them authorities in the field of unsocial behaviour, since by a stretch of logic, unsocial can be readily converted into "abnormal." A brief survey, so to speak, of the non-psychiatric phases of crime is necessary to delimit the field of our discussion tonight.

Crime in its most comprehensive sense consists in acts or omissions to act that are forbidden by that social organization for conduct control, the law. Those acts are forbidden (for the sake of simplicity, I disregard the omissions to act) which are held to be destructive or threatening to the social structure of the times, or which arouse indignation, fear, or horror on the part

of the community, or the rulers of the community. This brings it about that laws vary from place to place, and from epoch to epoch, ascending to social structure and attitude. In almost all communities, rejection of established religion was held at one time or another to be the gravest of offences, and the heretic was burned because his crime evoked horror and resentment of a kind hardly appreciated today, but to be compared, for example, to the stir caused by a foul murder. This attitude towards difference of opinion in religion disappeared as soon as unanimous religious belief ceased to be regarded as a binding force, and when its importance was transferred to other matters. Incest, which we regard with such horror as a so-called natural crime, was sanctioned by the source of law in Ancient Egypt. Stealing from the outsider held an honored place in the morals and laws of barbaric and nomadic races. Polygamy was no crime

in the days of Abraham, and is an honored institution in Eastern countries of today. Murder in revenge for private wrong, to avenge private insult, and to settle private conflict was the way the red-blooded man was supposed to react in all of Europe until recently. This private vengeance code still exists as a mental state based on tradition in the primitive cultures of parts of Italy and parts of the United States. So intimately related to murder is the social tradition and culture of a group that we have the strange spectacle of Anglo-Saxon England with a low murder rate, and Anglo-Saxon Tennessee mountain with a high one; and the still stranger spectacle that the Italian transplanted to Massachusetts has an extraordinarily high murder rate, while his American born sons practically never appear as murderers.

Certain statistical relations which appear throughout the literature show the divergence between crime and psychiatry. Men and women figure equally in psychiatric situations, but they figure so differently in crime that it may be called a masculine prerogative to break the law. The pressure of the social tradition is quite different in the case of men and women, and thus part of the difference in crime. This, as Sullivan points out, makes crime akin to alcoholism as in part constitutional, but in largest part social, whereas the bulk of psychiatric situations is constitutional in origin. Crime appears most conspicuously in adolescence and early manhood, this is not the case with mental diseases. And again, not to exhaust the differences, but to add one more to them, crime varies with social relations, with economic stresses and crises, with wars and pestilence, and mental diseases do not show any such variations.

Thus, there is a social responsibility in crime considered as a whole, so that society has been said to have the kind of crime it deserves. That there is an effect on potential criminality in training, home conditions, example, and diverse social factors, is tacitly conceded by the law in the care it shows not to allow the orphan to be adopted by immoral and law-breaking people, in the consideration it gives to the claims of each divorced parent for the care of the children. Yet, when the product of bad social conditions appears before the bar of justice, his crime receives consideration, and the consideration of history of the events which have shaped the criminal is discarded as dangerous and non-judicial sentiment! We might in fact stretch our idea of social responsibility into a doctrine of determinism, into a doctrine which made heredity and environment the sole factors, and which eliminated individual responsibility. *But this is an extreme which may be combatted by an opposing philosophy, as well as by common sense and the needs of society.*

I stress this social nature of crime mainly because I believe that psychiatry has a useful

function to perform in the field of criminology. This paradoxical attitude is explained thus: I feel that any group and any discipline which pretends to be able to do too much, awakens an inevitable resentment before and after it has failed to fulfill its promises, which discredits its legitimate claims. Psychiatry must not penetrate into the great social problems beyond its lines of communications, it must not pretend to a science of character when none as yet exists, it must not translate its hopes and theories into facts which it urges law and society to accept for their salvation.

If we study a crime as an act, then it becomes at once apparent that law and psychiatry view acts quite differently. "External acts," says Austin, "are such motives of the body as are consequent upon determinations of the will." "For all legal purposes," citing Hearn, "an act presupposes a human being. It assumes that he is practically free to do such act or leave it undone. It implies that he desires a particular end, and that for the purpose of attaining that end, he makes certain muscular movements. These motions, thus willed, and their immediate and direct consequences are called, without any minute analysis, an act." And Pound states that "Acts are exertions of the will manifested in the external world."

But a psychiatrist, or a psychologist, might easily write on human conduct and hardly uncover a will so transcendently free to devise acts as implied by the legal writers. We conceive conduct as arising fundamentally from great instincts which often struggle for the mastery of the motor apparatus, as for example the sex and social instincts; we seek its source in moods arising both from the great inner structures of the organism, and from the contagion of the moods of other human beings, as well as from the rest of the world; moods and feelings which govern thought, choice and deed. We conceive conduct as governed by intelligence, by inhibitions arising from that intelligence or from fear, from social feeling, including that social feeling called conscience. We think of the mental life of man in its relations to his acts as no simple, free, intelligent choice, but often as a choice obscured by ignorance or low intelligence, often governed by motives poorly defined in the mind of the chooser, sometimes translated into action by gusts of feeling arising reflexly from the environment or from the recesses of the organism. We see acts arising from perverted instincts or from lack of normal instincts, we see drugs and disease destroying that brake upon impulse and unreflecting conduct which we call inhibition, and producing conduct foreign to the past history of the individual. In short, we do not see the act as the manifestation of a will, an intent, but as a resultant of forces at the peak of which may sit that capacity to choose we call the will, but which forces may,



on the other hand, sweep into action through a pathological will or through none at all. So that, when the law regards crime as something implying guilty mind (Shirley), we agree only if the idea of mind be extended far beyond the confines of intelligence and the knowledge of the difference between right and wrong as related to things in general or the particular act; beyond the confines of delusion, as the next step of criminal responsibility, beyond the confines of irresistible impulse; which are still the principal criteria of irresponsibility as the law propounds its question to the expert witness. A feeble-minded child knows the difference between right and wrong, if it has been taught the right social attitude; there need be no delusion to shape insane conduct and as for the irresistible impulse! I share the incredulity of the learned English judge, Rolfe, who says, "It is true that learned speculators in their writings have laid it down that men with a consciousness that they were doing wrong were irresistibly impelled to commit some unlawful act, but who enabled them to dive into the human heart and see the real motive that prompted the commission of such deeds?"

The real criterion for responsibility as I see it, is the existence or non-existence of a mental disease or disorder which interferes with law-abiding conduct. The symptomatic definition of insanity and irresponsibility, as residing in incapacity to know the right or wrong of a particular act, in delusion, and irresistible impulse, gives way in the mind of psychiatrists to the existence or non-existence of mental disease. We see a variety of mental diseases of diverse origins, which manifest themselves in different ways, and which interfere with conduct, criminal or non-criminal, in diverse fashion. It will repay us to attack the problem of responsibility in crime as a psychiatrist views it. *For we must keep firmly in our minds that criminal responsibility is to be fixed by jurists, that they have social motives, which though they are not ours, are the fruit of a social experience which is different from our own, and that they aim at the welfare of society through the suppression of crime.* If that suppression can be helped by our views, they should, we feel, adopt them, but in the last analysis their judgment must be depended on to fix responsibility.

In General Paresis, for example, there may exist a stage prior to that breakdown of intellect which is so characteristic of that disease, when the disease may be declared to exist almost without gross mental disturbance, yet where the character changes so as to make petty thievery very common, though sexual crime of a serious type and murder also occasionally occur. Here a character change for the worse is a definite fact and without delusion, dementia, irresistible impulse—here it is in the general lowered inhibition, which permits crude desire

and conduct to appear, that we must seek the cause of the crimes committed. One might hesitate to call a paretic insane who, nevertheless, could not be held responsible.

In Senile Insanity, murder is relatively frequent, often associated with delusions of marital infidelity, but at other times related to an increased irritability, which, however, can only by a stretch of the imagination be called an irresistible impulse. The senile sufferer commits sexual assaults on young children at a stage of his disease when he clearly knows the difference between right and wrong, when he has no delusions upon which to place the burden of responsibility and especially that solitary delusion of a mind otherwise sane, so beloved of the law, but as non-existent as the dodo; when his act may even have deliberation—and yet, as we study the case, as we examine his body, and especially as we see a change of general character which often precedes the gross and final breakdown, we do not hesitate to say that we deal with the early stage of Senile Dementia.

In Manic Depressive Psychosis, the main change is in mood, on some organic basis we do not understand. Crimes are here committed, especially in the depressed phase, of a very serious type, as murder of one's family, directly under the influence of the type of delusion and impulse the law has in mind, and it is relatively rare for them to arise otherwise. But in the manic phase, where serious crimes rarely occur, misdemeanors and minor crimes are frequent at a stage where the heightened self-feeling and the impulse to activity break down the restraints which training and social pressure build up, when instincts held in check by fear of the law, respect for others, and a just self-valuation, reappear. Every psychiatrist whose practice is outside the institutions, has seen mild cases which one would hesitate to commit to an insane hospital, who get into all kinds of social difficulties just because they appear normal.

It is in the group of conditions we call Dementia Praecox, that we find the nearest to the real irresistible impulse. In catatonic praecox, the furor however finds its expression in an act which is not resisted, which presents so far as we can see, no moral struggle, and thus differs from the classical irresistible impulse. It is rare that injustice, from the standpoint of psychiatry, is done the well-developed case of dementia praecox. Nevertheless, the early dementia praecox, listless, leading an unreal inner life, beset by a gradually evolving false notion of the life around him, is quite common in jails and penitentiaries, which he has reached for crimes which represent the reaction of a disordered mind to the complex society we all live in, and in which we struggle to find an adaptation not easily reached.

These are the more common psychoses—the least common of all, the true paranoia, has fig-

ured heroically in the discussions because of his "solitary" delusion, his idea of persecution, which leads him to take vengeance on his persecutors. This was the type of psychosis in the McNaughten case, which laid the foundation of the celebrated theory of responsibility and insanity which in large part governed English and American jurisprudence up to our own time. This type of delusion was heightened by Ers-  
 skine, in an impassioned plea, to the first place in determining the responsibility of the insane. Yet, even in true paranoia, the delusion is not the only clinical feature of importance, and the whole mental life, even though the individual conduct himself well, becomes falsified and distorted. The delusion indeed may not relate directly to the crime, as in the case of the paranoiac on his way to kill the Governor of Massachusetts, who killed a policeman who inquired into his business.

I might go on this way, through one disease after another as we classify today, though imperfectly. The true epileptic furor, or psychic equivalent, is rarer than Lombroso and his successors have postulated as a cause of crime, because in the confusing of resemblances into identities, so characteristic of the Positivistic school of criminology, every outburst of brutality became labelled larval epilepsy. The epileptic, as a result of his attacks, becomes brutal and sullen, and because he is thrown out of one job after another in consequence of his fits, he descends into lower and lower social strata. Thus, he becomes a criminal, often "normal" enough in his crimes, but the victim of a chain of events which has started with his epilepsy. One does not have to invoke any metaphysical relationship between crime and epilepsy to see that the epileptic is pushed towards crime in a way that the law would hardly recognize as lessening his responsibility, but which we who must study other than the proximate causes to which Bacon limits the legal consideration, can give great weight as limiting responsibility.

I come to a group of conditions which are lumped together under the caption "feeble-mindedness," and which have appeared very conspicuously in recent literature as the background of the crime of the individual offender. Statistics gathered here and there in jails and penitentiaries, sometimes on psychological tests and sometimes on the history and general reactions of the criminal, give varying percentages of mental defectiveness in the criminal communities. There is great reason to suspect that the higher percentages are due to the nature of the tests employed, the group selected, or the bias of the examiner, or perhaps to all three factors. Those whose experience with feeble-mindedness extends beyond criminology know that the lower types of mind of the world do much of its hardest and most uncongenial labor, clear its sewers, carry its garbage, build roads, and

are its lowest and poorest paid servants, and that they have a useful place in the scheme of things. It may be uneugenic to breathe the heresy, but I dare say that life would not be aesthetically and free from discomfort for most of us if there were no feeble-minded in the world.

It is not the really low grade feeble-minded, the true idiot or imbecile (who rarely commits serious crimes) concerning whom psychiatry and the law have any different standpoint. The obvious defective, who has been known as the community fool, with his gross countenance and his ungainly body, is quickly sent to the institution for the feeble-minded, where he belongs. It is the moron, often not to be distinguished in appearance from the rest of his fellow men, who is a stumbling block to legal theory and medical judgment. Tested by his life history—the story of great difficulty in school, advancing no further than the fourth or fifth grade, irregular employment at the lowest kind of work, by the unsteadiness and undevelopment of his purposes and emotions, and tested by the psychological tests which show his mental level to be from eight, let us say, to eleven, and by those other tests which bring out his lack of real interest in aught but the narrowest range of his personal experiences—we find him to conform to the higher grade of feeble-mindedness. Is he responsible for the crime of whatever nature which he has committed? (It is pertinent to remark at this point that the crimes for which the mental defective of this grade is to be punished practically never are the higher offences against property, such as embezzlement, forgery, and fraud, but are more commonly malicious arson, rape, robbery with violence, stealing, burglary, and murder, in the order named. (Goring.) Our feeble-minded schools would need enormous enlargement to receive this type of feeble-minded, and it is perfectly proper to send them to jail, *provided they are never discharged. Here is a point I will develop later, but it will become obvious that the idea that lessened responsibility means lessened incarceration is entirely wrong.*

It is the position of psychiatry that the definitely feeble-minded and especially the morons, have a status in responsibility not essentially different from the frankly insane, despite the fact that here is generally no incapacity to distinguish between right and wrong, etc. The point is that there is a general incapacity to profit by teaching and experience, that difficulty in following ethical standards may accompany difficulty in learning mathematics, that lowered inhibitions and crudely expressed instinct may go with a mind that knows what society means by its laws and its restrictions, but has no ability to profit by experience or to govern conduct by a distant goal. Anger, fear, lust, and desire in their nakedness, relatively unclothed by discretion and unhampered by sufficient intelligence—this is the mind of the moron; this is either a

mental disease or defect, creating at least a relative responsibility.

I digress here before studying another group of psychiatric cases to discuss our attitude to the normal. Are not the normal, if there exist any such, of varying degrees of responsibility, in that they have varying intelligence, varying moods and emotional states, varying degrees of inhibition and powers of clear choice? May not the act of the normal man arise through a gust of emotion which sweeps him into crime, overpowering those mental forces which keep conduct social; may not lust operate almost undeterred in a mind which averages well, and may not it come to pass that acquisitiveness and desperate social situation, operating together break down the injunction "Thou shalt not steal," just as the passion of revenge breaks down "Thou shalt not kill?" The answer to these questions is, of course, "Yes"—but the corollary, shall we speak of irresponsibility in these cases, is not to be answered by psychiatrists, at least as yet. For though we cannot say just what it is, there is a difference of kind between the parietic, the paranoiac, the manic depressive, the feeble-minded on the one hand, and the normal on the other. All that we get to know about these disease states is that there is some pathology, which is to say, there is a difference from the normal. We may philosophize about the non-psychiatric offender, we may study him as sociologist and psychologist, but we must keep from pushing forward our understanding of him as authoritative. Where we deal with mental diseases of whatever type, we are the only authorities mankind has, but where we step into everyday life, we must prepare for buffets and incredulity. We shall have plenty of work for the next century or two understanding and treating the insane, the feeble-minded, the epileptic, and the neurotic. The pathology that we deal with will help, as all pathology does, us and others in understanding normal function, but it does not explain in any fullness, social life and social institutions.

The object of the criminal law is to substitute public for private vengeance, is to reinforce those social feelings which tend to keep the individual in conformity with social law, and which struggle against egoistic purposes, through the fear of punishment and disgrace. The law thus acts from the side of society through the motives of revenge and self-protection, and from the side of the potential offender, it acts as a cohesive and socially accepted transmitter of disapproval and pain. Pain and disapproval are part of the technique of teaching—without them experience would not teach or deter. *It is a soft and unpsychological view of existence which excludes pain and punishment as valuable.* Even though hanging for sheep stealing is unjustified, imprisonment and fine, deter forcibly the most of those who might otherwise steal. But they do

not deter those who have mental disease, or deter them in a lessened degree, and they do not deter those of the next group of psychiatric cases, the so-called constitutional inferior.

Stearns states that psychiatric ignorance of any subject can be measured by the number of names it has acquired. The English invented the term moral imbecile to explain those individuals who go through life uninfluenced by punishment or social disapproval, and who do not, therefore, subordinate their egoism to the laws of society. Often mentally below par, they are not feeble-minded, and indeed may be at least of average intelligence. The Germans changed the word to "psychopathic personality," and the Americans, to show their psychiatric insight added a milestone to progress by coining the label "constitutional inferior." The fact is that here we tread a dangerous path, for it is difficult to separate out what is constitutional disease or defect in this condition from what is perhaps conveniently called *acquired* viciousness. The habitual criminal may be a constitutional inferior, but we get nowhere if we merely substitute one term for another. If a person from his earliest days lies continually and often fantastically, if he chooses deliberately, despite a normal environment and training, to shun work of a steady kind and chooses instead crime, if he becomes a drug habitue, and is subject to temperamental manifestations of a bizarre kind, we need not absolve him from punishment as irresponsible, for we are not, as psychiatrists, at the place where our knowledge is definite concerning him. We may simply state that he lacks the social instinct, at least comparatively, and after his history has become that of a definite repeated offender, we may urge on society the need of permanent segregation. Jesse Murphy and Alfred Bartlett, to cite two notorious recent examples, would have been so diagnosed at the age of twenty, and if they had then been segregated for good and all, the annals of crime would be minus many highway robberies and several murders. *Here again the conception of limited responsibility does not carry with it the evasion of penalty, but instead, the idea of special treatment of the case, with probably permanent segregation.*

Here I come to the crux of the psychiatric position towards responsibility and crime. Psychiatry stands for a comprehensive study of the individual delinquent, to use Healy's phrase, and it pays less attention to the crime. Law considers first the crime, and its attitude is necessary since the equal administration of justice somehow implies that the same crime shall have a similar punishment, and nothing so sets the community astir with resentment and suspicion as the notion that the law has ceased to be blind in its punishment. That in practice, one judge fines almost all alcoholics, another puts them on probation, and still another sends them to jail,

does not alter the theory which the community clings to as the proper working principle for the law. But arson is not quite the same thing (Sullivan) in the case of the feeble-minded boy who sets fire to see the excitement, as in the case of the business man who burns down his building to collect insurance. Moreover, it is in accordance with the history of the reaction to crime to individualize the study and treatment of the offender. A primitive people, like a child, punishes the inanimate and the beast, as well as the human being. Dogs and horses have been tried in other days, and the insane and the feeble-minded have been knowingly put to death up to our own times. The growth of probation, the building of reformatories, the establishment of Juvenile Courts, are efforts on the part of the law to handle the offender in an individual way, and our contribution of lessened or absent responsibility is a further step on this historical course.

It is unfortunate that society has focussed its attention on the psychiatrists, and his value to the courts by his testimony in murder cases. After all, there are but a fragment of the cases where responsibility is an important issue, and while the law does not adopt the psychiatric attitude, yet in practice, the acceptance of a lower degree of murder as the verdict brings it about in most doubtful cases that segregation and not execution takes place. It is a curious fact which one learns in studying the cases of murder in State Prison, a fact which I owe to Dr. Stearns, that there are undoubtedly many cases where psychiatrists have declared a man sane when he was not, and almost none of the reverse. *In other words, the clamor of the mob has reached the psychiatrist to influence his clinical judgment just as it reaches the district attorneys and the judges.* But returning to the subject, it is in the mass of lesser crimes where psychiatric study ought to come into play, for it is in just these cases that lawyers seek to avoid any discussion of the mentality of their clients. A jail sentence sounds better to the lawyer whose client is on trial for burglary or arson than a protracted, perhaps permanent, stay in an insane hospital or a school for the feeble-minded. *The psychiatric examination should come from socie-*

*ty as a source of information which it needs in order to deal adequately, as well as justly, with the offender.*

This means a new technique in the employment of the psychiatrist. While no one can deny the defendant the right to his own expert, the State, in the form of the Department of Mental Diseases, should study the accused, and the report given to the judge and the jury. On the stand he should be given a freer play in stating his conclusion and the basis for that opinion. Wherever possible, hospital observation should be utilized, since in a doubtful case, an hour or two is not sufficient. Conflict with the rules of evidence is a matter for the lawyers to work out, but certainly a hypothetical question involving contradictions and painting a one-sided picture is no way to reach an honest conclusion and a fair statement, however much it may be necessary in present day jurisprudence, which says that only the jury or the judge may pass on facts. That psychiatrists are themselves in part to blame for much of the disrepute attending their appearance in court is, of course, known to all who realize that *trial by combat, which is still the underlying principle of a trial in court, brings out combative instincts, partisanship, mercenary motives, and all those attitudes which operate against candor and clinical judgment.* The expert in court must at the present day stick closely to his medical attitude, must speak of mental disease and not of insanity, must fight for the right to use clinical criteria in establishing responsibility.

I cite the words of the great Maudsley in conclusion. "There are advantages in recognizing a just principle even when events are not ripe enough for its application, when it looks Utopian and excites the derision of practical men; for it slowly modifies feelings and ideas, acts as a solvent of prejudices, and, notwithstanding seemingly insuperable difficulties, tends by hardly perceptible degrees to its realization in action. The sincere recognition of it is, as it were, a prophecy which finally brings about its own fulfillment: the Utopian idea of one age becoming often the commonplace idea of a succeeding age."

## OBSERVATIONS OF A MEDICAL MAN IN AN ORTHOPAEDIC CLINIC

BY FRANCIS C. HALL, M.D.

### 1. BODY MECHANICS

THERE is a relationship between body mechanics and health. This is my theme; and the first questions to be raised are: "Why do certain individuals stand with the strong outlines of a Greek statue, and others with the weak slouch of an unsuccessful life?" "Why do some people acquire the hollow back and sagging belly of the lazy African savage, while others retain the graceful spinal curve and muscular abdomen of

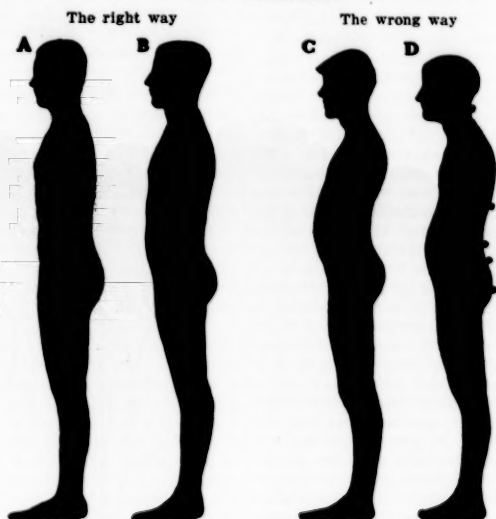
the alert Indian warrior?" "Does posture only indicate good or bad health?" Or is it important only as a matter of cosmetics; "Are the Greek God and the Indian warrior only more likely to obtain the mate of their choice, or is there a physiological disadvantage in the slouching posture and do avoidable illnesses tend to beset him who assumes it?"

This brief and entirely clinical article is, in a way, a confession of faith. It will not be con-

vincing, but it reports an experience of close association with an orthopaedic clinic for three years. The association with the surgeons was entered into with a very real skepticism as to the results to be obtained by what may be called

splendidly upright because they feel physically fit and know how to stand properly. They slouch because they feel poorly or because they have never learned the principles of body mechanics, or for both reasons. It does make a difference

# BODY MECHANICS



(A) EXCELLENT MECHANICAL USE OF THE BODY

1. Head straight above chest, hips and feet.
2. Chest up and forward.
3. Abdomen in or flat.
4. Back, usual curves not exaggerated.

(B) GOOD MECHANICAL USE OF THE BODY

(Compare with Fig. A)

1. Head too far forward.
2. Chest not so well up or forward.
3. Abdomen, very little change.
4. Back, very little change.

(C) POOR MECHANICAL USE OF THE BODY

(Compare with Fig. A)

1. Head forward of chest.
2. Chest flat.
3. Abdomen relaxed and forward.
4. Back curves are exaggerated.

(D) VERY POOR MECHANICAL USE OF THE BODY

(Compare with Fig. A)

1. Head still farther forward.
2. Chest still flatter and farther back.
3. Abdomen completely relaxed, "slouchy."
4. Back, all curves exaggerated to the extreme.

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a remodelling of the body. This skepticism has been gradually replaced by the conviction that these methods employed almost exclusively by orthopaedic surgeons, ought to be practised by every medical man, and that the principles which underlie them are basic and true.

Briefly, these principles are that people stand

how a person stands, and it is not merely a matter of cosmetics. People who slouch, violate the principles of correct body mechanics and these people form a large percentage of the patients coming to the orthopaedic clinic. They present functional symptoms, the most common of which are backache and foot strain. Other com-



plaints are pain in the knees, in the shoulders, and in the neck. They have ptosis and protuberant abdomens and the symptoms so often associated with these, such as soreness in the lower quadrants of the abdomen and difficulty of urinary control, and irregular bowel action. Most important of all, a large percentage show general debility. There seems to be a definite relationship between this debility, poor body mechanics, and static difficulties.

There is a general impression that it does make a difference how a person stands. Almost unconsciously we favor the upstanding individual. He seems more fit and he suggests a stronger character than that of the man who slouches. He seems more efficient and is more readily accepted for employment. It is the man who slouches who asks for time off. Increased efficiency is much sought after in industry and in following the work of the physiologists, many employers are seeking this in their workers by giving more attention to their health. Better air, better light, and in some cases, rest periods are provided in modern industry. It is recognized that working in abnormal positions leads to disabilities, and proper seating is provided in factories, and in forward looking schools and colleges. It seems reasonable to believe that there are good and that there are bad positions of standing. At Harvard University and Smith College this principle is accepted and special corrective exercises are required of persons who slouch badly. The importance of a first-class body to carry a first-class mind is emphasized and the D person in the chart has been accepted as potentially weak and not first-class. The A man appears to stand up under a bigger load of work than the D man, by and large. This seems to be the army experience, also, and Dr. Roger I. Lee and Dr. Lloyd T. Brown who worked out the accompanying chart at Harvard University felt as the result of their observations, that it is the D man who goes to pieces under strain. If there is a close relationship between posture and health, the question at once arises, "Is bad posture the cause of the difficulties which follow its use, or does poor posture merely indicate bad health?"

Beside this general impression that the upstanding individual is generally a healthy person, and that the man who slouches is far from fit, the belief is held by many orthopaedic men that a high percentage of the patients coming to an orthopaedic clinic with other than acute traumatic conditions are persons who habitually slouch, and that this manner of standing is largely responsible for many of the conditions complained of. It is accepted that many are in poor general health and this fact is often very important from the standpoint of treatment. It is argued, however, that many present static difficulties who are apparently in good health, that they have slouched merely from careless-

ness or from lack of knowledge of body mechanics. Many of these people were taught to stand erect with the weight carried on the heels in such a way that body balance required lumbar lordosis and protuberant abdomen. Of late many women have actually cultivated a fashionable slouch. In these people there is a distinct violation of the principles of correct body mechanics. Slight trauma, extra fatigue, or acute illness may be the straws necessary to produce acute conditions. For example, it is thought that lumbar lordosis and also pron-

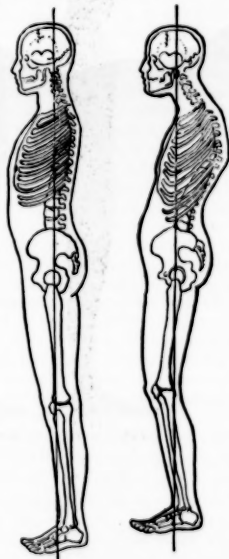


FIG. 3

FIG. 4

FIG. 3. Normal skeleton showing line of gravity. FIG. 4. Outline of skeleton showing relaxed position.

Note how much more work the neck, back and leg muscles have to do in Fig. 4 than in Fig. 3. In Fig. 3, there is better balance, so that the bony structure carries more weight, and the muscles less work than in Fig. 4.

tion of the feet often lead to chronic joint strain and it requires only a little overuse or slight strain to bring on an acute condition. In these cases there is no margin of safety as there is in the A type of person. This is easily seen in the accompanying chart which shows what constitutes the standards of body mechanics. Here the A figure would seem to be using his body correctly and the D figure incorrectly, because in the A figure the lines of force seem to be more nearly correct and there is better body balance. This can be seen better in chart No. 2. Used incorrectly, as in figure D, the lines of force seem to put more work on the muscles, the

patient is thought to tire more easily than normally, and is potentially more liable to backache, foot strain, and muscular fatigue than the A man. As we have said, it is the D person who comes to the orthopaedic clinic seeking relief from persistent symptoms. The A man rarely comes except for acute injury. When this D person, with certain persistent symptoms, tries to use his body as the A figure does, he is never made worse; he is usually made better; he is often made well.

Now the question is important as to why a person assumes this slouching position. Its importance was brought home to the writer by being allowed to study some of the posture cases from a medical standpoint. In a good many cases an underlying condition was present which kept the patient below par. In many cases it was fatigue, either from overwork, mental or physical, or from too little sleep. It is amazing to note what people expect from their bodies. In other cases there may be organic disease. In some cases atypical myxoedema or athyrea was found. That a person with a D habitus develops static difficulties more frequently and more easily than the A type is due then in part to the fact that the former is often below par to start with as compared to the A man. In all such cases a person stands in a position which registers the way he feels. The body registers fatigue and poor health just as the face does. Therefore in facing a problem of statics associated with poor posture some underlying cause must be considered and proper measures taken to improve the patient's general condition. No measures taken to correct the posture will be of permanent value if some underlying cause makes a person feel so tired that proper posture is impossible for him to maintain. It was for this reason that one patient, a doctor, was put to bed for two weeks as a preliminary part of the treatment for an exceedingly incapacitating foot trouble, static in nature. This was followed by two weeks in which the patient in bed two-thirds of the time. The problem was of long duration—a pronation of the feet due to a slouching posture. He had seen competent orthopaedic men but failed to respond to treatment because he was physically exhausted and could not stand properly. His relief was complete and with attention to the general health should be permanent. Other such cases might be quoted. In many cases there is a combination of bad habits in using the body and poor general condition. Frequently a patient will say he was perfectly well until after a sickness which kept him in bed for some weeks. A woman will state that her backache or foot strain began after getting up from confinement. Thus the patient may have stood incorrectly for years, sickness or debility led to weakness and poor muscle tone, the already poor posture became worse and static difficulties

resulted. Too much emphasis cannot be laid on this dual relationship. We medical men have doubtless over emphasized the matter of health and rest in static difficulties at the expense of the principles of body mechanics. Orthopaedic specialists have doubtless in many cases laid too little stress on the general health, expecting too much from body mechanics.

The cases of athyrea are worth mentioning again. These cases were patients who failed to respond to the usual treatment. They complained of excessive fatigueability. They usually had low blood pressures, some dryness of the skin, especially of the lower legs, and in winter there was a great deal of "chapping" of the skin and often breaking of the skin of the fingers. They felt the cold excessively. They often had slow pulse and were sometimes overweight, and commonly there was a congestion of the throat and often of the eyes. Their metabolism readings were from 10 to 20 (Dubois) and they responded promptly to thyroid medication. Therefore we suppose that they represent thyroid insufficiency though few had myxoedema. Although I believe no pathological changes have been found in the muscles in myxoedematous patients, it is well recognized that muscle fatigueability is a common complaint. These patients had soft, atonic muscles and, of course, felt too tired to stand correctly. It is interesting to note in this connection that Nellis B. Foster writing in Nelson's "Living Medicine" says, "the myxoedematous patient droops all over." Probably some of the cases who have seen many orthopaedic surgeons and have failed to be relieved of their difficulties represent this type of case. Where a patient fails to improve satisfactorily with accepted treatment, and where fatigue and organic disease have been ruled out, metabolism studies may prove helpful in diagnosis and treatment regardless of whether the patient represents the textbook picture of myxoedema or not. In interpreting the metabolism reading, however, it should be recalled that undernutrition itself can give a low metabolism. It is recognized that at least two metabolism tests on successive days should be done before assuming that a basal metabolism has been obtained. It takes very little nervousness or tension to materially increase the metabolism reading, and the novelty to the patient of the first test is sufficient to give a reading higher than normal. Also, the importance of using caution in the use of thyroid gland substance should be emphasized, in order to avoid giving the patient symptoms of hyper thyroidism. Professor Reid Hunt has shown that there is great variability in thyroid preparations of their active principle, organic iodine. Therefore, a preparation of known reliability should be used, and it should be used, we believe, by beginning with doses such as 1/10 grain (0.0065 gm.) of Dessicated

Gland substance, twice a day, increasing the amount slowly, and checking the patient and his metabolism fairly frequently.

To the writer, then, the treatment of these cases associated with faulty body mechanics would seem to be both medical and orthopaedic. The general health should be improved by every available means, and the body mechanics should be changed to normal. Fortunately, in doing this last, no attempt is made to bring about a posture abnormally hard to maintain, but merely a return to normal lines of stress and strain. In correcting the body mechanics, the most important treatment is corrective exercises. This, with rest, might be sufficient were it not that this remodelling of the body is a long process, and most patients cannot give full time to getting well, for they must work. Apparatus must therefore be used for a time in many cases, to expedite recovery. It serves to spare the part, whether back, knee, or foot. It is always well to emphasize that apparatus is a means to an end and is of secondary, not primary, importance.

Below, I have with some hesitation, tried to relate in detail for the benefit of men not trained in orthopaedics, the static difficulties which seem to be associated with incorrect posture. I am assured by orthopaedic men that the orthopaedic facts related are correct so far as is known. The difficulties mentioned are all functional at the outset, organic disease having been eliminated from this group.

#### BACKACHE

Of the complaints presented by this group, backache is perhaps the most common. Indeed it is one of the most common complaints in medicine, and it is often mentioned as a secondary complaint in taking the average patient's medical history. These backaches on study, as a rule, do not prove to be due to organic disease such as tuberculosis, or even arthritis. They are generally functional, and Roentgenograms disclose little or nothing. They have a history of "lumbago" or "sciatica," or backache on slight fatigue for many years. Physical examination, however, gives information which is of value. First, on motion of the back, there may be muscle spasm and lack of full, free motion, especially in forward bending. Flexion of the straight leg on the body may be limited. These limitations represent protective muscle spasm, due to a sensitive part in the back. A second evidence of trouble is found in tenderness on pressure at certain points. These points are demonstrated by dots in the accompanying chart, and represent five places where one may find back difficulty, as follows: (1) over the spinous processes of the cervical region and especially at the muscular insertions at the base of the skull, (2) in the region of the lower ribs, to the right and

left of the spine, (3) in the lumbo-sacral region, to the right and left of the spine, (4) over the spinous processes of the lumbar region, (5) over the sacro-iliac articulations.

#### LUMBAR BACKACHE

One of the common points of tenderness is over and between the spinous processes of the lumbar vertebrae. This occurs in persons standing with relative hyperextension of the lumbar spine—an exaggeration of the lumbar curve. In these cases, there may be contact of the spinous processes with each other, with consequent periosteal irritation. Roentgenograms often show evidence of this irritation. Of course a slender type of person whose spine allows of great motion must have very marked hyperextension to acquire this type of backache. It is the heavy boned type of person with relatively less normal back motion who on slight exaggeration of this lumbar curve develops this type of backache. There is marked tenderness on pressure over these lumbar vertebrae with the patient lying face down. Here, hyperextension is the motion which gives pain. The writer had a most convincing experience with this type of backache. This dragging irritating ache on fatigue was of many years' duration. It was an especially constant feature of ward rounds during internship. Driving an automobile any distance brought pain. Extra stress and strain—especially a game of squash—led to an acute sacro-iliac joint strain—characteristic in every respect—with local tenderness, limited back motion and limited straight leg raising. The usual treatment for this was accompanied by correction of body mechanics, with relief, apparently permanent, of the chronic backache.

#### SACRO-ILIAC AND LUMBO-SACRAL JOINT STRAIN

Sacro-iliac joint strain and what is called lumbo-sacral joint strain represent two other difficulties occurring in the low back. There is some difference of opinion as to which is the more common lesion, and which is the joint whose irritation causes the irritation of the sciatic nerve roots. Tenderness on pressure of both these joints is often present at once. It seems probable that in some cases poor body mechanics causes a chronic strain of these joints. Obesity and poor general physical condition are added factors. With them we get flabby muscles, and abnormal strain on the ligaments holding the joints. An acute condition is often merely an exacerbation of the chronic state. There are two reasons for this statement. First, quite a large per cent of persons with very bad posture, and with a history of backache, but with no acute condition, have tenderness at these joints, with muscle spasm and limitation of motion—evidence of joint irritation. Roentgenograms will often show beginning cal-

cification of the ilio-lumbar ligaments, which is nature's attempt to protect the joints. This is not true of normal persons, the A type. Secondly, in no other way is it easy to explain how a person in his usual health can acquire acute joint strain simply by carrying a heavy suitcase, or by a slight twist of the back on stepping off a curbstone—the type of history some patients give. The osteopathic explanation seems incorrect.

On examining patients with sacro-iliac or lumbo-sacral joint strain, the joint most involved is the more tender on pressure. There is protective muscle spasm on back motion in both, especially on forward bending, or straight leg raising. Supposedly, where forward bending is difficult on standing, and easy on sitting, it is the sacro-iliac that is most involved, and this is confirmed, if strapping the buttocks with adhesive plaster, gives prompt relief. Where all back motions are painful in all positions, it is the lumbo-sacral joint which is probably most involved. The lumbo-sacral joint tenderness is not often over the midline of the juncture of the last lumbar vertebra and the sacrum, but to one side and it is often over the transverse process of this vertebra. When this is so, X-ray often shows an asymmetrical abnormality which is the cause of the difficulty. Where this occurs, bad body mechanics probably acts in the following way. The abnormality has always been present. Trouble only appears when with the fatigue and stress and strain of life, bad body mechanics appears, causing crowding of the bones in this region in a way to give pain. For example, a man will have a normal transverse process of the fifth, (or if there are six, the lowest) lumbar vertebra on one side. On the other side there will be a large, butterfly wing transverse process. As the man settles into hyperextension, this transverse process apparently comes in contact with the crest of the ilium or sacrum causing irritation and acting as a lever prying apart the fifth lumbar vertebra from the sacrum.

#### PELVIC BACKACHE

Low backache has been commonly supposed to be due to pelvic disease. This is now believed to be much more rarely the case. One of the reasons for thinking it due to pelvic disease, or to malposition of the uterus, was due to the frequency of pain coming at the catamenia. This is thought to most commonly occur in women with this D posture. The explanation offered is that the lumbo-sacral and sacro-iliac joints and ligaments are chronically irritated and tender from incorrect posture; that the catamenia has this characteristic of a miniature pregnancy at term that at that time there is a relaxation of the ligaments of the pelvic joints. As there is already a relaxed condition of these ligaments in the persons with

poor posture, this further relaxation gives pain. I have on several occasions seen strapping with adhesive plaster—in a way to draw the sacro-iliac joints together—stop this menstrual pain at once. Further reports on this point would be interesting. In this clinic many cases with menstrual difficulty occurring in association with the D posture have been entirely relieved by correcting that posture. Of course, marked ptosis is also a factor in the D person, and at times this can be so marked as to cause pressure on the pelvic organs. It is a fair question, however, if this in itself can cause backache. Operation on this theory often leads to relief of backache, but we must not forget the salutary effect of rest in bed. Certainly people very commonly appear in an orthopaedic clinic who have had this suspension of the uterus operation without relief of the backache. Permanent relief from the backache apparently must be preceded by change of body mechanics. Often the improvements in general physical condition that comes from rest in bed will sufficiently improve the body mechanics as to bring relief of symptoms.

#### DORSO-LUMBAR BACKACHE

A fourth point of tenderness in the back is in the region of the tenth or twelfth ribs, close to the spine. Here one often finds exquisite pain on pressure, and a definite intercostal neuritis. At times Roentgenograms show slightly abnormal anatomy such as large twelfth ribs, or abnormal transverse process of the first lumbar vertebra. Here a similar situation probably occurs that occurs with cervical rib. The abnormal anatomy does not do harm until fatigue and abnormal posture leads to incorrect use of the body and a crowding of the bones together. Even in people with normal anatomy, there is often a crowding of the bones together, demonstrable by Roentgenograms. This type of backache always occurs in persons with very narrow chests. The slant of the ribs in relation to the sternum and spine is acute in these cases so that the lower ribs posteriorly are close together, and in the flank the ribs are so low as to almost touch the crest of the ilium. At times the lower ribs can be demonstrated as posterior to the transverse process of the first lumbar vertebra. There is certainly in some cases a contact of rib with transverse process or of rib with vertebra demonstrable by Roentgenograms and probably in other cases of rib with rib. As explanation, the pinching of the intercostal nerves and periosteal irritation are not remote possibilities. Certainly these cases, like many cases of Cervical Rib, can be entirely relieved by correcting the body mechanics and the result is often very spectacular. These cases have been diagnosed as pleurisy, angina pectoris, neuritis, gall bladder disease, etc. because of the referred pain, and in spite of much medical attention for

many years, they still have distress. Lying with hands over the head and with the chest high will often give temporary relief at once. Probably this condition is more common than is recognized. The obvious treatment is to prevent the bony contacts. This is done by strengthening the rib elevating muscles by exercise, especially the intercostals, and by bringing about a correct habitus.

#### NECKACHE

The final difficulty closely associated with the back is neckache. It is a very common experience with desk workers. Some people have this symptom severely and frequently. They cannot explain it. Pain may radiate upwards to the head or downwards to the back. Generally this ache is merely muscle fatigue. Arthritis must of course be ruled out here as in other back conditions. This fatigue is brought about by constantly using the head too far forward—out of balance, so to speak. A flat chest accentuates this forward position of the head. In these cases, the cervical spine does not do its share of the work. The neck muscles do more than their share. It is corrected by strengthening the neck muscles by exercises, by resting them frequently, by taking the position of hyperextension, by raising the chest, and by changing the posture so that the forward position of the head is eliminated as much of the time as possible.

All these conditions can be relieved and can only be permanently relieved by changing the body mechanics. The acute condition is treated by keeping the spine flat, that is, lying on a flat bed, on the back, with pillow under the knees, or face down, with pillow under the abdomen. This position relieves bony contacts, and joint strain and puts the part at rest. In the face prone position in acute cases, the application of heat to the back relieves the symptoms due to strain. In the chronic patients who must work, taking these positions for only a few minutes several times a day will give tremendous relief and by resting the fatigued muscles, makes a better posture easier to assume and avoids thus, the joint strain and bony irritation associated with the D posture.

Some understanding of these neck and back conditions is necessary if we are to really relieve our patients and make it unnecessary for them to feel that they must see the irregular practitioners. There is no doubt that massage and manipulations give great temporary relief. Often we physicians give them no relief. We find no organic condition and say "nerves." We can help them easily, and we believe by sound methods which bring enduring comfort.

#### LARGE SAGGING ABDOMEN

The contour of the abdomen is thought to be determined by the manner in which the body is used. It is practically always in the persons

with incorrect body mechanics that a large sagging abdomen is found, and the incorrect body mechanics is considered an important factor in its causation. Certainly this sagging abdomen does not occur in the upstanding individual except in the type who "stand up so straight that they lean over backwards." A child told to stand up straight will do this. The weight is then carried on the heels, and protuberant abdomen is necessary to compensate for the lumbar lordosis in order to maintain the balance. Lumbar lordosis is so often present that one might well say that "sway back" and "pot belly" go together. Of course, in these cases ptosis is often present—and as above stated there may be poor general condition or even disease. Overweight accentuates the condition. The posture increases the ptosis. The ligaments attached to the cervical spine are important supporting structures of the heart and abdominal organs. Forward position of the head, such as one finds in the D figure, favors ptosis, therefore, by diminishing the support offered by these ligaments, and flat chest such as one also sees in the D figure leads to crowding of the viscera into the lower abdomen. The degree of abnormality in size of the abdomen depends on the degree of variation from normal body mechanics. One might theorize at this point to explain why some persons deposit adipose tissue only in the abdomen, and say that they use the body in such a way as to use the abdominal muscles very little, and with less use, there is less vigorous circulation and therefore a tendency to the deposition of fat.

An abdomen which is large out of all proportion to the rest of the body is disfiguring. Because of this alone it is entitled to consideration, but there are more important reasons for discussing this subject. One important reason is that with the ptosis that this usually represents, is associated in women the sagging of the pelvic floor with all this means of cystocele and rectocele and difficulty in urinary control, and this association seems to be more than coincidence, for the pressure of sagging intestines can be realized if an extreme case of ptosis is placed on all fours, and the hand placed under the abdomen. Recurrence after suspension operation or ptosis and pelvic floor damage would seem inevitable with such weight, unless body balance is changed and remodelling of the body brought about to lessen the weight by changing the lines of force. With this ptosis, of course goes pelvic congestion in the women, often with leucorrhoea. Probably it can occur in men, and the question can be raised as to whether this could be a factor in increasing prostatic congestion.

A second reason for considering the size and weight of the abdomen important, is that many patients with heavy abdomens complain of a soreness or dragging sensation in the right or left lower quadrant of the abdomen, relieved by



abdominal support. Appendectomies have been done in some of these cases without relief of symptoms. Whether the pain is due to muscle fatigue or to strain of the inguinal rings, no one knows. It is unknown, too, whether there is a direct relationship between sagging abdomen and inguinal hernia. In these cases, the lines of force would seem to bring unusual strain on the inguinal rings. Certainly, it is this type of patient which the surgeon hates to operate upon, for fear of recurrence of the hernia.

A third reason for considering a sagging abdomen important, is that it brings increased strain on the knee, often causing an irritative, postural arthritis. This will be mentioned below.

#### FOOT STRAIN

This is often due to bad body mechanics. All persons in the D group carry their weight incorrectly on their feet. That is to say, the lines of force passing from the midline of the thigh, through the midline of the knee, fall to the inside of the foot instead of the normal position. The muscles whose supporting insertions are on the inner side of the foot and help support the longitudinal arch, therefore carry more than their share of the body weight. They tire and weaken under the strain, and the foot is used in pronation more and more. The results are well known,—a weak ankle, acute pain, or acute sprain, or a chronic aching in the longitudinal arch or in the heel,—and these result especially when sickness, fatigue, or being "run down" are added. Here again, local treatment of the feet is not enough. It is the least important thing to do. Despite foot plates and foot exercises, the patient with the D posture will tend to carry his weight to the inside of the foot. The reader has merely to assume the D position to realize this, and to then assume the A position to realize that the man "on his toes" carries his weight correctly on his feet. One should correct the health or health habits and also the body mechanics to bring about permanent results.

#### ARTHRITIS OF KNEES

There is a type of knee trouble due to bad body mechanics, and it may develop into a definite irritative arthritis. Here the lines of force may be such that the inside of the knee carries more than its share of the body weight. A vertical and rotary strain results. The patient with the D posture is prone to such static strain. With a sagging, unsupported abdomen, the knees are used in a slightly bent position. In this posture, the gluteal muscles are used very little, and in marked cases they are quite flabby. These muscles are the external rotators of the leg. Contract these muscles and the body

weight falls more nearly in the line of the center of gravity. Highly developed gluteals represent one of the chief differences between man and the anthropoid ape. "Stick a saxepee in the fold of your buttock. Now hold it there," shouted the English sergeant training our men in military carriage. Try it, and you will find yourself in correct posture. The incorrect use of any joint leads to irritation—later, arthritis. If treated early, this is the easiest kind of arthritis to relieve, and it is entirely mechanical in origin. The fact that Roentgenogram shows no evidence of arthritis elsewhere seems to confirm this statement. Treatment of the acute condition by rest and heat, and correction of the body mechanics may be expected to give complete and permanent relief. Obviously, in these cases, removal of possible foci of infection, or treatment of possible intestinal stasis is usually without effect.

#### "NEURITIS" OF ARMS AND SHOULDERS

With the D posture is frequently associated a forward position of the shoulders. Many patients with this faulty position of the shoulder have "neuritis" which can be relieved by changing the position in which the shoulder is habitually used. This "neuritis" is pain in the shoulder which varies in position and intensity, and often radiates down the arm. It is made worse by putting the hand behind the back or doing anything which inwardly rotates the humerus or leads to increase of the forward position of the shoulder. It is therefore often worse at night, unless this inward rotation is avoided. There seems to be no evidence of toxic inflammation in these cases. Their response to treatment argues for their mechanical origin. The exact mechanism causing the trouble has not been demonstrated. Probably there is inflammation of bursae about the joint. Often there is tenderness over the subacromial bursa. Probably at times there is a real joint irritation from incorrect use, just as can take place in the knee. It is well to remember that in growing children, this forward position of the shoulders leads to "winged scapulae," and is generally accompanied by flat chest. If the importance of Body Mechanics, or the right use of the body is appreciated, the physician may easily correct many difficulties before much trouble has developed, and long before the patient seeks a specialist. He may also treat vague joint pain more intelligently and distinguish the joint irritation of a faulty mechanical use, from the more serious changes of an early chronic multiple arthritis. Even if we are convinced of the existence of a chronic arthritis and embark on our search for hidden foci and metabolic derangements, we can spare the joints from the added injuries of mechanical strain.

## SUMMARY

As a medical man I have become convinced that

1. There is a relationship between body mechanics and health, to some extent causal.

2. The correction of poor body mechanics without any other medical or surgical treatment has been often accompanied by the relief of backache, neckache, joint strains, so called neuritic pains, and symptoms usually attributed to visceroptosis.

3. The correction of many static difficulties has been temporarily successful by rest or improvement in the general health.

4. The highest percentage of permanent successes in correcting static difficulties seems to occur when proper attention is paid to correction of both body mechanics and imperfect health.

5. In cases demonstrating poor body mechanics and debility, quite a number prove to have a metabolism below minus 15%, suggesting athyrea. They improve with thyroid medication.

6. Appreciation of the existence of joint pain or even irritative arthritis due apparently to joint strain from incorrect body mechanics is important in differentiating between types of arthritis.

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## PIERRE FIDELE BRETONNEAU, 1778-1862\*

BY WILLIAM PEARCE COUES, M.D.

A BOY of seven years was seen in 1922 by his family physician, the report being that he had been ill for two days, and had complained of sore throat. The physician found on examination that the temperature was 100.6, the pulse slightly elevated, the boy did not seem really ill, but as reported, did complain of his throat. The sub-maxillary glands were enlarged and tender on the right, and examination of the throat showed a triangular patch of greyish adherent membrane on the right tonsil. The case seemed clinically to be diphtheria, and without waiting to hear from a culture the physician administered a suitable dose of antitoxin. The next day the culture was returned as showing the presence of Klebs-Loeffler bacilli. In two days the membrane had melted down to a tiny patch, and the third day the tonsil was clean, the cervical glands having become hardly palpable. The eighth day a culture from the throat was pronounced negative, and another one on the tenth day. The twelfth day from the first visit the boy was as well as usual. 1922 and 1822! what a change from the time that Bretonneau made

his epoch-making studies of diphtheria and taught the medical profession the difference between croup and diphtheria, and successfully performed tracheotomy for the latter disease.

His epoch-making work on typhoid fever, or "dothinerteric," as he called it, was as important as that on diphtheria, and was done before that of Louis, who has up to recent times been generally credited with the first differentiation of, and intensive clinical study of this disease.

Bretonneau's work on diphtheria and typhoid fever should be read in his original memoirs on these subjects to be fully appreciated. At Tours, in June, 1922, were held impressive fêtes by the Ecole de Médecine et Pharmacie of that city in commemoration of the work of this great man.

Among the celebrated names of Bretonneau's assistants at Tours, and helpers in his great work, we find those of Velpéu, Moreau, Goursaud, Trousseau, and Baillarger, who, we are told, elaborated his findings concerning these two diseases, and spread his doctrines, through Paris, far and wide. The subject of this sketch, history tells us, "came from a humble family of practitioners" of the country, who had, for sev-

\*Read at a meeting of the Boston Medical History Club, February 16, 1926.

eral generations, "exercised their art in Touraine." At an early age Bretonneau was appointed Officer of Health at the small village of Chenonceux; this was in the year 1801. Here in his country surroundings he quickly showed his ability, and his talent for clinical research was soon noticed, and came to the ears of those connected with the General Hospital at Tours. The then prefect of Indre et Loire, the General Pomereau, a most wise and sagacious official, offered him, on account of his good work, the position of Chief of the Medical Service at the Tours Hospital, and on March 17, 1815, Bretonneau eagerly began his duties and studies at the hospital, which were to be of such future importance.

His country practice had given him most valuable experience in the study of various epidemics and this was to stand him in good stead in his hospital work. His studies in this country practice were purely clinical, but with his hospital facilities, he was at once able to add pathologic studies, and co-relate his findings in a large series of cases. Especially was this so in his chosen work on diphtheria and typhoid. We are told that he gave almost undivided attention to these two diseases for years. He early insisted on the inflammation of Peyer's patches, as being pathognomic of typhoid, and gave the most accurate and graphic descriptions of the symptoms of this disease, which cannot be improved upon to this day.

Up to the time of his researches, croup and diphtheria and anginas of the throat were inextricably confused. He brought order out of chaos, demonstrated the true pathology of diphtheria and its difference from what was called croup, or the common laryngitis of children. He also found time to make studies of dysentery and malaria, and showed the specificity of various insect poisons.

In the preface to the 1922 edition of Bretonneau's work, Gilbert tells us that it was due entirely to Bretonneau that Broussais' attractive but fanciful and impossible theories concerning inflammation were met with unanswerable, logical arguments, and a sane nosology and nomenclature were saved to medicine.

Bretonneau's fame was spread by his internes as they went to Paris, Trousseau and Velpeau being particularly active in this work, which was so near their hearts. The love and affection of Bretonneau's pupils for their master is impossible to exaggerate,—it amounted to worship.

A word about the hospital where Bretonneau's work was done is in order. The first general hospital at Tours was founded on the 28th of June, 1656, by Louis XIV. In modern times the hospital was reorganized into two services, medical and surgical, the first medical chief being Jean Bianchi, an army surgeon of

Italian origin; Gatin Claude Deslandes was the first surgeon, appointed in 1756.

It was Bretonneau's custom to walk to and from the hospital and on the 26th October, 1841, he writes to Velpeau: "You know the distance from the hospital to the town, an hour to go, and come . . . I still go on foot, as I have during the last twenty years." We are told that he arrived at his wards about 6 A. M. and the internes must be there earlier, to see that all was ready. Each patient was examined with the greatest care, hours being spent sometimes over one patient. He then dictated the notes to his interne. He carried all the records home at the end of the case, to study at night, and add the notes of interest to his work. Necropsies were the absolute rule of his wards. Gursant, in 1816, said that Bretonneau "passed his life by the 'bedside of the sick and in the morgue.'" Trousseau took after his chief, for he said, "I open all the cadavers that come to my hand, and when I run up against anybody I am always tempted to say to him, 'Don't you want me to slit your abdomen a little?'"

An anecdote of Bretonneau shows how far his zeal for science was carried. We are told that there was a malignant epidemic of diphtheria at Tours in 1818, and at this time the physicians of Tours did not agree at all with Bretonneau concerning his theories of diphtheria, and as to the etiology and treatment. They were open in their criticism of him and his theories, and pretended never to have seen, among their patients, the symptoms described by Bretonneau in his patients coming to the hospital; they openly said that they doubted the reality of his statements.

Bretonneau was determined to prove beyond cavil what he knew to be true himself, as to the findings in all these cases. At night he made an expedition with his interne, Velpeau, to the cemetery, climbing the wall, with the aid of a ladder, and found the graves of the children who had died of angina in the town and been buried the day before. By the dim light of a lantern he rapidly disinterred them and examined the air passages of these children, satisfying himself of the exactly similar findings with his own cases. These excursions were repeated more than once, and those living near the cemetery were aroused, and the seekers after knowledge were fired upon, Velpeau carrying back to the hospital souvenirs, in the form of shot, in the posterior regions of his anatomy. However, Bretonneau was able, the story says, to affirm that all those examined were dead of "Angine Maligne," and that the lesions were identical with those shown by the hospital cases.

One of the most interesting parts of Bretonneau's book on diphtheria is that devoted to the historical aspects of the disease.

Some of the more intimate details of Breton-

neau's character and life are given in a most interesting account in *La Chronique Médicale* for October, 1922. We are told that Bretonneau, with the aid of instruments he often made himself, and pondering on certain works of the masters of olden times, which it pleased him to read, and above all to meditate upon, established doctrines which achieved great authority. He was disdainful of publicity, and it was with the greatest difficulty that he could be prevailed upon to publish his work. Mediocre work was to him, anathema; despite his constant work, he left comparatively few published writings. "It took the insistence of his assistants, notably Velpeau and Trousseau, to decide him to put into print for the medical world the results of his researches."

It was in 1818 that he first commenced his epoch-making work on typhoid fever, after long periods of time in the autopsy room from which he deduced the theory that it was due to a specific agent, and that it was contagious, a fact that Louis did not recognize. He reformed Broussais' treatment of typhoid, giving a reasonable diet.

He was revolutionary in therapeutics, using cold baths and antipyretics for rheumatism, and advocated belladonna in constipation, and the use of hot water in hemorrhage.

One author, in *La Chronique*, tells us that Bretonneau had the most profound distrust of money. "I don't know how it is," he writes his first wife, the 26th December, 1814, "loving to give, I fear so much to receive. . . . I cannot bear that one demands a memoir of me, or that they made me hold out my hand to receive money (well counted), perhaps disputed. I always am tempted to throw their few sous at their heads from which they have so much pain in separating themselves." Velpeau said of his chief, "He could refuse nothing to his own friends, he was always ready to go anywhere, for anybody. The son of one of his friends is menaced with icterus in Paris. Patients, hospital, all sorts of duties, nothing stops him, he quits everything, and next day is at the bedside of the young man who is only slightly indisposed!"

"He was so impressionable that he would fall in a faint beside his friend whom Gouraud operated upon for empyema, or near a parent, at the aspect of Mr. Roux's knife; but practised himself the most delicate operations without hesitation, and with the firmness of the most consummate surgeon."

We are told that when he returned to Chenonceux he divided his time between his patients and his favorite occupations. He had a chemical laboratory installed near his work cabinet and also a cabinet of natural history. He made instruments for experiments in physics, and added a forge to his laboratory, as well as a turning lathe and instruments for enamelling and solder-

ing. He also studied the temper of different metals to find the best for cataract needles. He sculptured on wood, made thermometers and distilled alcohol as well as observing the customs and actions of ants, and revelled in horticulture.

If he was allowed to set foot in the garden when he came back from the hospital, his sick patients were forgotten. He could not be dragged away when occupied with his typhoid or diphtheria studies and turned a deaf ear to all else in medicine. If someone rang the bell he would say, "Go and see, my friend, if it is a question of sore throat, or of a fever. If so, I will go. If not, say I am not in."

At sixty years of age he began the study of Greek, so that he could read in the original a treatise on the croup. The first lines of his treatise on typhoid, which he named "Dothinenterie," published in 1822, are characteristic of the man and his works. He says: "It is after a large number of autopsies that I have described the phases of the intestinal exanthem."

The occurrence which led to his work on tracheotomy in diphtheria is of much interest as described in his treatise on diphtheria. (P. 219-202, *Traité*, 1822.) "La Diphthérie, or Inflammation Pelliculaire." He says: "I had each day occasion to see two horses, which breathed by the means of a tube of metal, of a dozen lines in diameter. The tube is fixed in the centre of a plaque, which helps to hold it in place and fits over the front part of the neck. These animals were operated upon three and four years ago and are in the service of a manufacturer of minium; they contracted in this work the noisy respiratory disease of horses (*cordage*) which made necessary an operation to keep open the air passages. The tube in one horse was not quite big enough—respiration stayed obstructed. When a bigger tube was put in, it became perfectly free. In repose the animal was not distressed even though he wore the small tube, but when he was obliged to work he was not able to breathe, and a larger tube, big as the thumb, was inserted into the trachea."

Of his first three operations for tracheotomy in diphtheria, the first two patients died, probably being toxic and in extremis. He devised the inner tracheal tube, permitting of removal of the outer one for cleansing, and had much better results after this.

As we have said, Bretonneau's work on the history of diphtheria forms one of the most interesting parts of his treatise on the disease. After patient research of old medical works in many languages, he gathered together in an orderly succession, clinical data and descriptions which showed the great length of time that the disease had been recognized by various names in different countries.

Beginning with Hippocrates, he scanned close

ly all the older medical writing which might give him help. Nothing definite was found in the books of Hippocrates, the description in the "Book on Dentition" probably referring to apthous stomatitis.

In the works of Aretius he found the first definite description of diphtheria, this author painting a graphic picture of the malady in all its aspects. It was known before his time, even, though not written of, and was common in Syria and Egypt, the name being *Ulcère Syriacum* or *Ulcère Egyptien*. Bretonneau tells us that Aretius ends his vivid picture of the disease thus: "At si in pectus per arteriam id malum invadat, illo eodem die strangulat." Bretonneau says that at the end of the sixteenth century it was constantly present in old and new Europe.

Scambati and Carnevale described the disease in Italy at the beginning of the seventeenth century in "de Epidemico Strangulatorio Affectu." In Spain the epidemic trouble was known as "Garotillo," because those attacked perished as if they had been strangled by a cord." *Affectus Suffocatorius*, and "*Morbus Strangulatorius*" were common names for the disease at this time. Mercatus says, "Ceux qui sort attients du garotillo perissent, en moins de quatre jours." "Instar laqueo suffocatorium."

Bretonneau's descriptions of the severe aspects of the disease are graphic in the extreme, and the tragedy of the affection is brought forth in a realistic picture that will never be forgotten by those who have read his words.

Objections to his operation of tracheotomy seem curious at the present day. (1) That the outside air, coming cool, without warming in the mouth, into the inner surface of the trachea would cause trouble and (2) that the membrane would reform and keep reforming, nullifying the effect of the tube.

Bretonneau recounts the disease in the Empress Josephine's family as follows: "I found it in three people of the same family, a little child, its mother, . . . and the grandmother, the Empress Josephine . . . The last instants, were preceded by aphonia, suffocation, and all the other signs of advanced tracheal diphtheria."

Turning to his treatise on typhoid for a moment, we find this graphic description of the symptoms of perforation (page 240, edition of 1826). "A sudden severe abdominal pain, generally accompanied by a chill. Pain beginning in the epigastrium and being diffused all over the abdomen, this marks the first degree of symptoms from perforation,—an index of the suffusion of the gas and liquids through the peritoneal cavity, causing an inflammation at each point of contact. There are ardent thirst, tension, tympanitis, . . . showing the nature of the trouble, which adds to the primary

infection." "No one of the sick with these symptoms of perforation lived over four days, after they appeared. . . ."

Gilbert writes instructively in the preface to the 1922 edition of Bretonneau concerning his priority over Louis in the published descriptions of typhoid or *Dothinenterite*. Recamier and Velpeau knew well of their chief's work at Tours, when they went to Paris, 1820-21, and spread the gospel. In fact, Bretonneau's treatise appeared in 1826 and Louis' in 1829, the latter omitting any reference to Bretonneau's work in his book. Moreover, he entirely missed the fact of the contagiousness of the disease. However, it is now well recognized that the credit of the description of the affection and the recognition of it as a contagious clinical entity, belongs entirely to Bretonneau.

Is it not fitting that his disciples and admirers, when thinking of that part of France known the world over as the "Chateau Country," should regard it as the "Bretonneau Country," in memory of its most illustrious son, "who lived to his eighty-fourth year, leaving behind him the luminous image of universal glory!"

#### HEALTH SERVICE SURVEY FOR BOSTON

THE result of the health service survey or appraisal of health services in the City of Boston, as carried on by the United States Public Health Association, coöperating with the United States Public Health Service was announced during the year. The result showed that Boston has scored for health services a total of 907 points out of a possible 1,000 points, and unofficially it was learned that this total has not been exceeded by any other city in the country. These figures are marked improvements over results showed by almost similar surveys in 1920. The Secretary of the American Public Health Association, speaking at a meeting in Texas last year, said in connection with these surveys that "we now have a means of determining the truth about a city's health protection, a method of appraisal which gives us a single figure that is an index of a city's healthfulness. It makes it possible to grade cities and list them in the order of their merit. The city that heads the list in health protection will have a distinction unexcelled."

The amount of money expended by the Health Department for the past year was about \$725,000, which amounts to about .92 per capita.—*Monthly Bulletin Boston Health Dept.*

Dr. George W. Bassow, a member of the Massachusetts Medical Society, is now at Douglas, Arizona, in general practice at McGuire Building, Suite 4.



**Case Records**  
of the  
**Massachusetts General Hospital**

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12101

MEDICAL DEPARTMENT

A laborer of forty entered for the first time November 4 complaining of weakness. He had had scarlet fever and rheumatism, and was treated in a hospital for possible fracture of the skull. He had had shortness of breath on extreme exertion ever since he could remember. He denied venereal disease, but had had a "prostate" which was treated by massage. For several years he had urinated once or twice at night, lately five or six times at night. His weight four years before admission was 222 pounds, his present weight 144.

The first definite date for the onset of symptoms of the present illness was June, five months before admission, when he began to lose first strength, then appetite. For several months before this, however, he had dull non-radiating pain in the lower back, increased by motion. This occurred once every few months. In the latter part of July he began to have nausea and to vomit about once in two weeks. Late in August he had to give up work because of increasing weakness and loss of appetite. A month before admission he became worse and went to a hospital out-patient department where he was given medicine for his "stomach" which did him no good. At this time his appetite was so poor that he was taking only milk, chicken and vegetable soup. He then began to have dizziness whenever he stood for any length of time. During the past three weeks he had vomited without relation to meals four or five times a week. The week before admission he was still worse; his dizziness was so marked that once he fell on standing.

Upon examination he showed loss of weight and prostration. The face showed a coppery bronzing. There was pigmentation of the hands, arms, armpits (?) and uvula. The tongue showed tremor. There was stiffness of the spine and legs and tenderness over the second and third lumbar vertebrae. The apex impulse of the heart was not seen or felt. There was no enlargement to percussion. The supracardiac dullness was not determined. The sounds were of poor quality. The blood pressure was 80/60-57/40. Examination of the posterior thorax was

unsatisfactory. There was questionable dullness above the scapula. The abdomen was sunken. There were no masses. Rectal examination was negative. On extension of the legs there was bilateral talipes equinovarus. The pupils and knee-jerks were normal. There was positive Kernig.

The urine was normal. The renal function was 25 per cent. The blood showed 10,000 to 5,400 leucocytes, 62 to 56 per cent. polynuclears, hemoglobin 80 to 70 per cent., 5,216,000 to 4,300,000 reds showing slight achromia, no anisocytosis or poikilocytosis. The platelets were normal at the first examination, increased at the second. A Wassermann was negative. The non-protein nitrogen was 58 mgm. November 5, 60 mgm. November 7, 74 mgm. November 19. The blood sugar was 101 mgm. November 7, 70 mgm. November 19. Phosphorus 5.5 mgm. Calcium 10.33 mgm. The basal metabolic rate November 7 was +10 (pulse 92, weight 61.4 kilograms); November 8 +0 (pulse 99, weight 58 kilograms).

X-ray (see Plate I) showed each kidney shadow fairly well defined, not apparently abnormal in size or shape. Overlying the midportion of the left kidney shadow was an irregular shadow of increased density suggesting calcification, perhaps representing calculus of the left kidney. There was also a small shadow of increased density overlying the shadow of the right kidney near the periphery below the eleventh rib, also possibly representing a calculus, though its position was further toward the periphery than usual. There were no shadows in the lower urinary tract suggesting calculi. Each sacroiliac joint was irregular and indistinct. The surrounding bone appeared thickened. There was some proliferation about the lower margin of each sacroiliac joint. There were well marked proliferative changes about the margins of all the lumbar vertebrae. A film of the chest (Plate II) showed a few calcified glands at each hilus. The periphery of the chest appeared clear. The extreme upper portion of the left apex was increased in density, suggesting a possible old lesion with apical pleurisy. The patient was too weak to stand for fluoroscopic study. Respiratory excursion of the diaphragm was not determined. The diaphragm was flattened on both sides and the costophrenic angle obliterated, suggesting bilateral pleurisy or a very small amount of fluid. November 7 a gastro-intestinal examination was made in the recumbent position only and without a motor meal. As far as could be determined there was no definite evidence of organic disease in the stomach or duodenum. The curvature appeared smooth and freely movable. Peristalsis was active. The barium left the stomach readily. The first portion of the duodenum was well filled and smooth.

The temperature generally ranged from 96°

to 99°; there were four scattered days when it rose above 99°; it never rose above 99.7° except for one rise to 29 November 24.

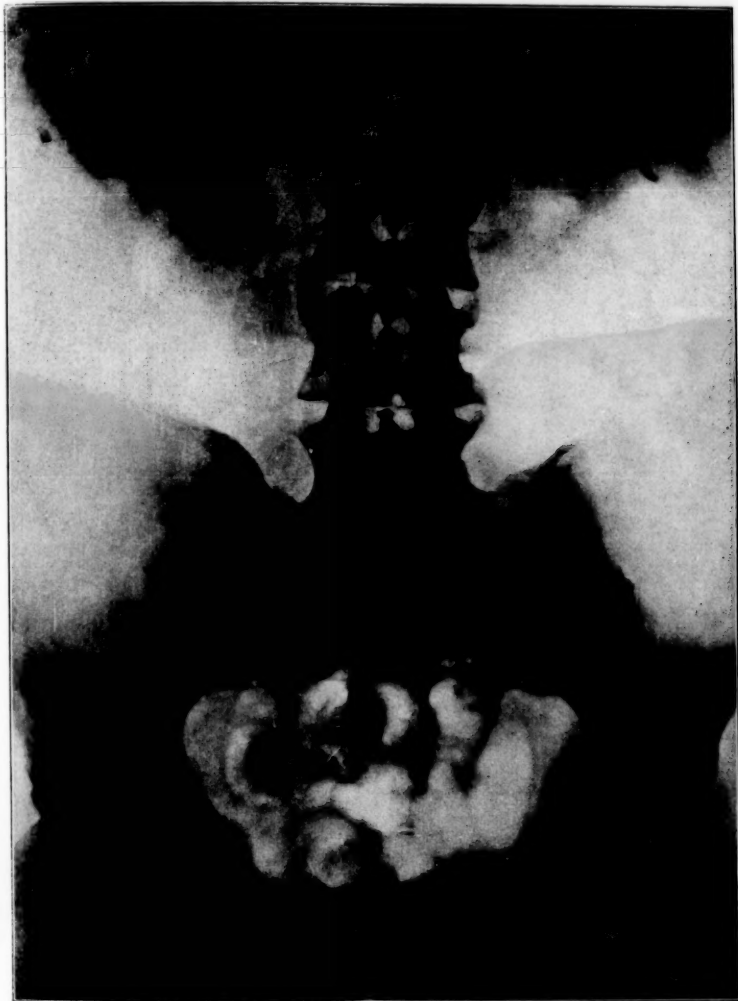


PLATE I. Each kidney shadow fairly well defined, not apparently abnormal in size or shape. Overlying the midportion of the left kidney shadow is an irregular shadow of increased density suggesting calcification, perhaps representing calculus of the left kidney. There is also a small shadow of increased density overlying the shadow of the right kidney near the periphery below the eleventh rib, also possibly representing a calculus, though its position is further toward the periphery than usual. There are no shadows in the lower urinary tract suggesting calculi. Each sacroiliac joint is irregular and indistinct. The surrounding bone appears thickened. There is some proliferation about the lower margin of each sacroiliac joint. There are well marked proliferative changes about the margins of all the lumbar vertebrae.

cept during one period, November 22-25, when it ranged from 98.8° to 102°. The pulse was

November 8 the patient began to be troubled with nausea and vomiting. The next evening he

vomited five times. He felt weak and dull. It was observed that the blood pressure varied from minute to minute; sometimes it was 84/65, sometimes 72/50. November 30 an ear consultant found right acute otitis media and did a paracentesis. The patient's voice grew much hoarser and his eyes became blood-shot. The fundi were normal. December 9 a throat con-

## DISCUSSION

BY RICHARD C. CABOT, M.D.

## NOTES ON THE HISTORY

1. Of course anybody has shortness of breath on "extreme exertion." That is a phrase that does not help us. The question is how long he has had it without extreme exertion.

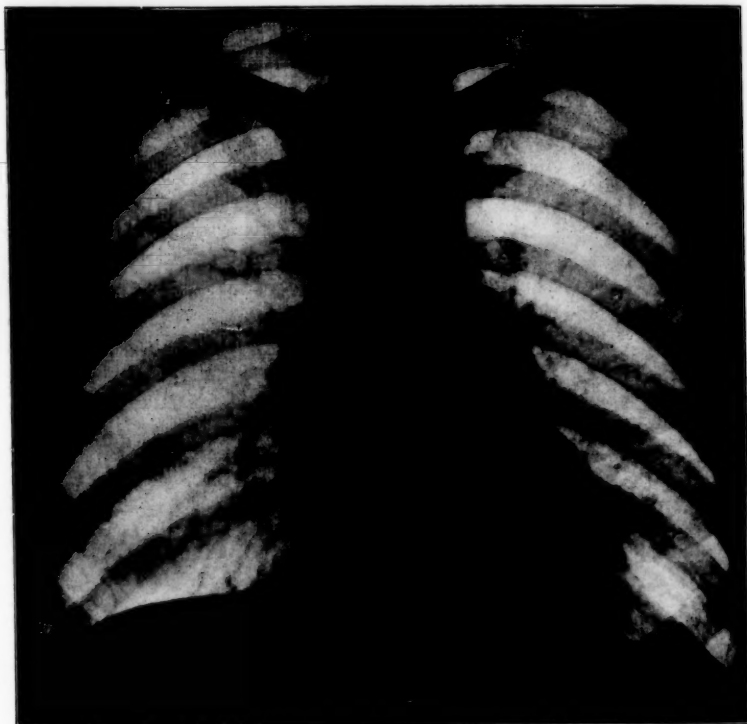


PLATE II. A few calcified glands at each hilus. The periphery of the chest appears clear. The extreme upper portion of the left apex is increased in density, suggesting a possible old lesion with apical pleurisy. The diaphragm is flattened on both sides and the costophrenic angle obliterated, suggesting bilateral pleurisy or a very small amount of fluid.

sultant found a probable acute sinusitis; slight tracheitis; no fixation of cords; the left cord was slightly thickened and red. An additional history was obtained of cramps in the legs only during the present illness and coming on mostly at night. The patient continued to be troubled with nausea and vomiting at intervals. It was difficult to say whether this was due to the disease or the treatment. December 20 he died.

2. Urination five or six times at night at the age of forty and in the absence of known urinary disease certainly makes us think of heart or kidney trouble.

3. He shows a big loss of weight. He hardly could have lost forty pounds in five months. So if he had been watching that he must have seen something earlier than five months ago.

4. This history makes me think of a case I

have been seeing lately. I think I will take a few minutes to tell about it. It was seen by several of the best consultants of this hospital for pain in the back in a lady of sixty-five who wrenched herself a little bit in the country in getting out of a carriage, and began then to have pain in the back, first on one side and then on the other, going down the legs from the back and more or less round the waist. She was sent to a hospital under first-rate orthopedic care, had a first-rate examination and first-rate X-rays. Absolutely nothing was found. She continued to have a great deal of pain of the same kind, and was seen by a number of other consultants, the best in the city. No diagnosis. She died at the end of three months. We did not have a necropsy so I cannot absolutely tell what was the matter, but I wonder whether anybody here would guess what we strongly suspect. X-ray and everything regarding the spine was negative on examination in a patient who has extreme pain in the back and nothing else,—no fever of any kind, and no other physical signs.

A PHYSICIAN: The last case I saw was gallstones.

DR. CABOT: But not causing death. We have to take that fact into consideration. Here is a case which one of the best orthopedic men in the city saw. There was no disturbance of circulation. Her heart went perfectly well until two days before death. There was no disturbance of any other kind,—urinary, respiratory, gastro-intestinal,—nothing.

Here is all I know about it. Three days before she died we found in one breast a nodule no bigger than a pea, very closely connected with the nipple and very hard. There was nothing in the other breast. Ordinarily one would have said, that is nothing. But as we looked it up we found a number of cases mentioned by Osler in which the thing we now think was there—namely cancer of the spine with negative X-ray—went along with cancer of the breast, but with the cancer of the breast so minute that despite the examination of several good men it was not found until the end. We do not know now that it was there. We did not take it out. But Osler said that the cancer nodule in a number of cases was so slight that even when they knew there was metastasis in the spine they could hardly find it in the breast.

It did not make any difference that we did not find it. She would have died anyway. But I have no doubt after reading these cases of Osler's that it will make me remember more than I have hitherto to look at the breasts extra carefully when there is pain in the back not otherwise explained; also not to rest diagnosis absolutely on a first-rate negative X-ray when we are considering cancer of the spine. What proportion of cases should you think could give definite evidence of metastatic cancer of the breast, Dr. Holmes?

DR. HOLMES: I think we show it in quite a high percentage. I have not tabulated them. There is an early period when the lesion does not show. I think if we took the cases that complain of symptoms and X-rayed them we should find very few that would not show.

DR. CABOT: Of course we had no necropsy. I cannot swear that it was cancer either in the back or in the breast, but that is what we all believed before she died.

5. I take it that at this time this man's nausea, vomiting and lack of appetite were about as important as any other symptom. Of course when we have vomiting associated, as this seems to be, with dizziness, it makes us think of the brain as the source of both.

#### NOTES ON THE PHYSICAL EXAMINATION

1. He came in here November 4, so it is not likely that he had recently been tanned by the sun to account for his bronzing.

2. When we are going into the question of Addison's disease and wondering whether it is or is not, the finding of pigment in the mouth is always put down as important corroboration of the diagnosis.

3. I take it that these extra low blood pressures with the pigmentation certainly must have made them think of Addison's disease, whether that turns out ultimately to be the best diagnosis or not.

4. The positive Kernig shows the same thing that was in the feet too, I take it.

5. The temperature is against meningitis, which we must think of with a Kernig such as he had.

6. I suppose they are trying to X-ray the suprarenal capsules. Do you ever find calcification in the suprarenal glands? They get cheesy,—is there any reason why they should not go on and get calcified?

DR. RICHARDSON: They get pretty near that stage sometimes.

DR. HOLMES: The plate of the chest shows a rather flat diaphragm on both sides and rather shallow costophrenic sinus. That might be due to pleuritis, diaphragmatic pleurisy or pleurisy on both sides. Of course that is rather an unusual finding.

DR. RICHARDSON: Do you think that could be chronic perihepatitis?

DR. HOLMES: That might be. It would be more likely on the left, because the pole of the left kidney comes in contact with the diaphragm.

DR. RICHARDSON: It may be of the spleen too.

DR. HOLMES: Yes, that might be. There is some chronic infection. There is nothing in the lungs to account for it. Of course we do not always find anything in the lung to account for pleurisy. The shadow of the hilus is normal, there are no mediastinal masses, nothing

unusual in the size or shape of the heart shadow. Does it say whether the diaphragm moved freely?

DR. CABOT: The respiratory excursion was not determined.

DR. HOLMES: That would be an important observation here, whether it was fixed or whether it moved fairly well with respiration.

This is the plate of the urinary tract and includes the entire abdomen. The outline of the kidney is visible on the left side quite distinctly. It is a rather irregularly shaped kidney and looks small. Such an observation as that is not of very great value. The size of the kidney shadow depends not only on the size of the kidney but on a number of facts,—the distance the tube was away, the size of the patient and the distance of the kidney from the plate. But this looks quite small, and overlying it as described in the text is a very definite shadow more dense than bone and probably representing a calcified mass somewhere. It is well toward the periphery of the kidney. Stones are usually in the region of the kidney pelvis. A badly destroyed kidney might have a stone as far out as that. It is much too low down to be in any way related to the adrenal. It might be a gland and have no relation whatever to the kidney. The fact that there are several of these shadows would make the conclusion more probable. On the right side a little outside the kidney shadow there is a smaller shadow. The kidney is not well shown on the right, and I do not think we can draw any conclusion as to the size or shape. Here is another shadow down near the sacroiliac joint, and another out here. I should be inclined to interpret those as calcified masses, probably glands, and not in any way connected with the urinary tract. We cannot rule out this one. It might be a stone.

DR. CABOT: On the whole we really have not distinguished the adrenals—could not expect to and have not.

DR. HOLMES: "Without a motor meal" means that the examination was done with one meal. Our custom is to give a meal with the breakfast to test the emptying-time of the stomach, and that meal was omitted.

DR. CABOT: The patient was so poorly, I suppose, they did not see fit to submit him to that amount of strain. They did the best they could to get evidence of disease in the stomach and could not get it.

These are not tremendous variations in blood pressure.

"It was difficult to say whether this was due to the disease or the treatment" is rather franker than records are apt to be, but it is often the fact I guess.

#### DIFFERENTIAL DIAGNOSIS

That acute infection of which we have evidence at the end in the sinuses, ear, trachea,

eyes, I believe is nothing more than terminal. I do not believe it has an important relation to his original disease. The things to be considered here, it seems to me, are Addison's disease and uremia. I will take the latter first, and see what evidence we can get of that.

We have vomiting which could be uremic, we have nycturia which could be uremic, and loss of weight easily accounted for in that way. Most uremic patients have more anemia. Most uremic patients have a higher blood pressure. A blood pressure so notably low in uremia is pretty rare so far as I know. Let us see what the urine itself shows.

MISS PAINTER: The urine was normal, 1.020 to 1.022, acid, clear, no albumin or sugar, three or four leucocytes per high power field at one examination, a few at the others, no red blood corpuscles.

DR. CABOT: We had twenty-five per cent. function, and the non-protein nitrogen has never been very high. I do not see how we can make this nephritis or uremia.

Ought we to consider brain tumor, on account of the vomiting and dizziness? We cannot make that diagnosis with negative fundus, no focal symptoms, and very little if any headache. The same reasoning applies to vascular disease of the brain. He may have it. We cannot diagnose it on any of the facts we have.

Could he have a pigmented cirrhosis of the liver, hemochromatosis? The pigmentation is not described in a way that should make us suspect that. We have no evidence of cirrhosis or of diabetes. Those are the three things we look for—pigment changes, liver changes, carbohydrate-metabolism changes—and we have none of them.

So I come back to Addison's disease as the best diagnosis. In favor of that we have vomiting of just about the type we expect in Addison's disease. We have changes in the color of the skin as we expect it. We have low blood pressure as we expect it. We have death not accounted for by anything that we can put our finger on locally, which is what we expect. We may or may not have cardiac symptoms in these cases. He had very little in the way of cardiac symptoms. But if he did not have Addison's disease I do not know what he had. If he did not die of Addison's disease he died of something I cannot think of.

If he had Addison's disease he probably had tuberculosis of the adrenals, because almost every case we have identified here has shown that and no other disease of the adrenals. Slightly in favor of some tuberculous process is what Dr. Holmes has told us about the pleura,—not strongly in favor, but there might be chronic pleuritis which represents a manifestation of tuberculosis.

DR. HOLMES: Those calcified glands too.



DR. CABOT: Whenever we have a pigmented case here I wish I knew more about pellagra. But I never heard of pellagra's killing anybody without more gastro-intestinal symptoms than he has. He has rather little in the way of gastro-intestinal symptoms. I do not believe we need seriously consider that.

If we go through in our minds the things that cause pigmentation of the skin, there is "vagabond's disease," which would not kill him, Hodgkin's disease, which he certainly has not got, uremia, which he certainly has not got, exophthalmic goiter, which he certainly has not got, sunburn, which I think we can rule out, poisoning with nitrate of silver, which stains the skin but does not stain it this color. It seems to me all of these can be ruled out. I cannot make any other diagnosis than Addison's disease due to tuberculosis of the adrenals, with a possibility of tuberculosis in the pleura. I shall be interested too to see whether there is any perihepatitis or perisplenitis to explain the flat diaphragm. Those two things I have seen most often in connection with syphilis, but I know no kind of syphilis with which this man could have died.

A PHYSICIAN: Was there eosinophilia?

DR. CABOT: I am sure it would have been mentioned if there had been, it is such an easily recognized thing. Suppose there had been, what would you have said?

A PHYSICIAN: It does sometimes occur in Addison's disease. It is listed as one of the causes.

MISS PAINTER: The eosinophils were two per cent. at one examination, none at the other.

DR. CABOT: That is nothing.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Addison's disease.  
Starvation.

#### DR. RICHARD C. CABOT'S DIAGNOSIS

Addison's disease due to tuberculosis of the adrenals.  
Tuberculosis of the pleura?

#### ANATOMICAL DIAGNOSIS

##### 1. Primary fatal lesions

Tuberculosis of the adrenals—Addison's disease.

##### 2. Terminal lesion

Wet brain.

##### 3. Historical landmarks

Chronic pleuritis.  
Obsolete tuberculosis of the bronchial glands.  
Chronic tuberculous perihepatitis and perisplenitis.  
Pigmentation of the skin.

DR. RICHARDSON: He was a poorly nourished white man. The examination of the head showed a wet pia, wet brain tissue, with everything else negative. The brain weighed 1610 grams, rather a heavy brain. I suppose the fluid had something to do with the weight.

The skin of the arms and hands showed a fairly marked brownish, rather bronzy pigmentation, and the skin of the face and lower thoracic region, the abdominal wall anteriorly, and places on the lower extremities showed a slight brownish tint, and on the anterior abdominal wall there were numerous minute scattered small brownish crusts.

DR. CABOT: The pigmentation was quite marked in this case?

DR. RICHARDSON: Yes, it seemed evident to me, but not so marked as it sometimes is. The mesenteric and retroperitoneal glands showed no definite tuberculous lesions. The margin of the liver was at the costal border, the diaphragm at the fourth rib on the right, the fifth rib on the left.

There was no fluid in the pleural cavities. The cavities were obliterated by old pleural adhesions. The bronchial glands slightly enlarged, pigmented and generally soft, but in two of them there were small fibrocalcereous areas. The lungs showed some edema.

The circulatory apparatus was negative.

The liver weighed 1415 grams. There were numerous old membranous adhesions binding the organ to the diaphragm and some on the inferior surface, and scattered in these adhesions were small fibrocalcereous irregular plaque-like masses. In the region of the peritoneum in the lower part of the right flank there was a small fibrocalcereous mass. The liver tissue was negative and no definite tubercles were made out either macroscopically or microscopically.

The spleen weighed 190 grams. Here again there were numerous old adhesions extending to the diaphragm, and in these adhesions small irregular fibrocalcereous plaques. The splenic tissue was a little punky, but no definite tubercles were made out.

The right adrenal measured over all five by three by one and a half centimeters, the left seven by four by two and a half centimeters. Each adrenal was largely transformed into fibrocereous material, and there was but little adrenal-like tissue left.

A typical picture of Addison's disease with the rather unusual chronic tuberculous perihepatitis and perisplenitis with fibrocalcereous masses.

DR. CABOT: This case seems to me to illustrate the fact that it is sometimes worth while to use the old-fashioned process of diagnosis by exclusion. Diagnosis by exclusion is one of the most risky and unsatisfactory things that there is. We want positive and not negative signs

to make diagnosis sure. But now and then in a case like this it leads us right when nothing else could. We had pigmentation here, which might be due to other causes. We had low blood pressure, which might be due to something else. And that is all. The question was, what else could it be except Addison's? And it did not seem that it could be anything else. So I think diagnosis by exclusion, which is going out of fashion—we do not hear the surgeons do much of it, we do not often hear the clinicians do it, because they are more interested in the cases in which they can put their finger on something positive—I think it still has its place.

## CASE 12102

## MEDICAL DEPARTMENT

March 9, 1925, a married woman of forty-four came to the Female Medical Out-Patient Department complaining of pain in the left upper abdomen and left flank of about two months' duration. She had always been well and strong except for habitual constipation and gastric symptoms of eighteen years' duration which became more severe two and a half years ago. At that time she first came to the Out-Patient Department, where a diagnosis of duodenal ulcer was made. Those symptoms apparently had been controlled by treatment. She had four children living and well. No miscarriages. No accidents or operations. Her catamenia had become irregular. Her best weight had been 124, her weight a year and a half ago 111, three months ago 119, now 113.

Her present illness began with a rather gradual onset two and a half months ago, when she had some pain in the region of the lower left ribs in the midaxillary line. This pain was present and absent for a few days at a time and was dull, lasted an hour or so, and was apparently brought on by activity and increased by deep inspiration. For two months she had increasing pain in the left upper quadrant and left flank which came on in the morning on first arising and lasted for one or two hours, after which she would be free for the rest of the day. When severe this pain radiated to the left back at the same level; never downward. It was increased by deep inspiration. It was not relieved by hot applications, by lying down, by defecation or micturition, by food or soda. She had no cough, no nausea or vomiting, no desire to defecate, no urgency, nycturia or dysuria. She thought her urine had been slightly dark and cloudy at times. Her bowels were regular. Shortly after the onset of this type of pain it became so severe that she was in bed for two weeks. At that time it would occur off and on through the day. She had no fever or other definite symptoms at that time. Since then the sharp pain had been only in the morning as described above. At night she could lie com-

fortably only on her back. Sometimes a dull grinding pain would wake her at four or five a. m.

Examination showed a woman rather underweight. The blood pressure was 140/90. The chest was resonant; no râles or friction rub. Heart not enlarged, no murmurs. There was an area of thickened skin at the left costal margin (local applications). The abdomen was negative; spleen, liver and kidneys not felt. Knee-jerks normal. No edema of ankles. Urine: normal amount, cloudy, acid, the slightest possible trace of albumin, no sugar. Sediment, 3 red blood cells, 10 white blood cells per high power field, and squamous epithelial cells.

A barium enema was essentially negative.

At a second visit the urine was slight cloudy, acid, specific gravity 1.030, a slight trace of albumin, no sugar. Sediment, many red blood cells, a few white blood cells, no casts.

She was referred to the Urological Department, where after genito-urinary X-ray which showed nothing remarkable cystoscopy was done. That showed edema about the left ureteral orifice. Both catheters passed easily to the pelves. The ureteral specimens showed blood on both sides. The pyelogram showed a normal pelvis on the left. There was a sharp angulation in the ureter about opposite the lower pole of the kidney. The right kidney was lower than the left.

During the following week she had some relief from the pain. She found that she could lie on her right side and that if she did so the pain in the morning was markedly relieved. She was advised to get a corset, and she has had complete relief ever since. She has gained twelve pounds.

This patient is passing through the menopause, the history of which may be of interest. When she first came to the Out-Patient Department two and a half years ago she reported occasional periods during the preceding year. She was very nervous. She had no hot flashes, but had occasional chills. She was given a bromide mixture containing gr. xv of bromides t.i.d. This had no definite effect, and she began having hot flashes. She was given ovarian extract gr. v daily. After that she had several normal periods at monthly intervals and was relieved of the nervousness as well as of the hot flashes. Since that time she has had more or less irregular periods, about every three months now. She is sometimes troubled by the hot flashes, which she finds are easily controlled by the ovarian extract.

## DISCUSSION

BY PAUL H. MEANS, M.D.

## NOTES ON THE HISTORY

I shall not go into detail on the symptoms of "duodenal ulcer", as they do not seem to be definitely related to this particular situation.

They had apparently been controlled by treatment.

The pain at the time of her visit March 9 had become so very severe that she hardly wished

NOTES ON THE PHYSICAL EXAMINATION

The thickened skin was evidently due to local applications. She had used iodine and many other remedies.



Shows a sharp angulation in the right ureter about opposite the left.  
to go to bed at night because she looked forward to the pain that she knew she was going to have in the morning, although she was perfectly comfortable in the evening.

the lower pole of the kidney. The right kidney is lower than

The urine was a voided specimen.

DIFFERENTIAL DIAGNOSIS

At the time when she first came in the differ-

ential diagnosis seemed quite obscure. I had never heard of a pain similar to the one she complained of. On account of the ulcer which she had previously there was a possibility that she might have pain from a complication of that. But that was a duodenal ulcer, and this pain was on the left side. Also her ulcer symptoms had been improved.

With the loss of weight and the pain malignant neoplasm was one of the things which had to be considered. At the time of her X-ray for ulcer there had been some rather confusing studies by barium enema, and the possibility of a cancer of the large bowel giving her this pain was considered. A barium enema was done on that account and proved entirely negative, ruling out that type of cancer.

A pleurisy is suggested by the fact that the pain was increased by respiration. She did not have any other symptoms of tuberculosis except the loss of weight. She did not have any signs in her chest at that time which would confirm a diagnosis of pleurisy. At the time when she was sick in bed for two weeks one would have expected a definite fever if the trouble had been from a pleurisy.

The renal conditions which might give a pain such as this include a renal stone, a neoplasm, and a tuberculous kidney. The pain is not the usual type for a renal stone. The typical renal colic is more frequently seen. A renal neoplasm could not be ruled out. A tuberculous kidney is considered rare without some bladder symptoms. She had never had any and has had none up to the present time.

I have left out the diagnosis which was later considered to be the cause of her trouble, because it never occurred to me at that time.

The urine at the second visit leads us to suspect one of the pathological conditions of the kidney which I have mentioned.

DR. CABOT: Was this a catheter specimen?

DR. MEANS: No, it was not.

We have the X-rays of this case. Would you like to discuss them here, Dr. Holmes?

DR. HOLMES: The striking thing about the plates is the low position of the kidney on the right, at least so far as we can see from the position of the catheter. The catheter evidently is in the pelvis. Of course it may be in one of the lower calices, but it is certainly quite low. The kidney is normally lower on the right. On the left side we have a completely injected pelvis. It shows a smooth outline, the calices are well shown, the usual cupping is present, there is no increase in the size. It is a perfectly normal kidney as far as we can determine by X-ray.

The next plate shows the ureter very well. They took out the catheter and allowed the opaque solution to fill the ureter. The only thing of interest is the rather sharp angulation just below the orifice. Such an angulation I

think is of no importance unless we have a dilatation above it or an abnormal kidney pelvis. But it would affect the ureter. So that without any evidence of obstruction such a kinking as that is of no importance as far as can be determined by X-rays.

DR. MEANS: I am interested in what Dr. Holmes says about the importance of that, because I had considered that that was the chief cause of her symptoms, and this seemed to be rather borne out by the following story. She had definite relief from the pain during the week following the passage of the ureteral catheter, which I considered to be due to straightening out the kink and relieving the situation. This did not relieve her completely. There was still considerable troublesome pain. She was advised to wear a tight abdominal binder. This seemed to give her some relief, but was difficult to keep in place, so she was advised to get a tight corset. She has worn this continuously ever since, has had no recurrence of the pain and has gained twelve pounds.

This corset was a rather longer corset than the ordinary ptosis belt and included a pad which fitted over the lower abdomen. I am inclined to think that the pain in her case was due to the low position of the kidney and the kinking of the ureter. The kidney on the other side, as we have seen, is still lower, but if there were an aberrant vessel which caused the kink of the ureter on the left we could explain the fact that she had the symptoms on that side only.

In the treatment of a ptotic kidney which is giving symptoms the passage of an ureteral catheter often seems to give relief. Other palliative treatment is the treatment which she has received, the abdominal support by the use of the belt or better still the corset. For the prevention of further trouble other treatment is necessary, particularly such things as will lead to strengthening of the abdominal wall and improvement in general condition, so that the fatty tissues around the kidney bed will be increased where they may have been depleted. Operation is sometimes advised in cases which do not respond to any treatment, but is often unsuccessful in relieving symptoms from a ptotic kidney.

The ovarian extract might act in a psychic way to control the hot flashes, but in this case it seemed to have a definite effect on the regularity of her monthly periods.

DR. CABOT: How do you think the abdominal support worked to help her? Why did that help her?

DR. MEANS: The abdominal support helps to support the kidney by increasing the lower abdominal pressure, and it seems to relieve symptoms. I have not seen any other cases.

DR. CABOT: That is, you feel as if the kidney

went up and straightened out the kink. But you did not have a chance to have an X-ray to see whether it did straighten out the kink?

DR. HOLMES: That plate is taken with the patient lying on her back, and it would seem hardly possible that one could by any support raise her kidney any higher than when she was lying down.

DR. CABOT: I was very much interested in what you said. When I saw that plate I thought, "Of course now we have the cause".

DR. HOLMES: That is only my opinion. Other men do not agree with me. I may be wrong about that; but I do not think from the X-ray point of view we are justified in saying the kink is causing any trouble unless we have some obstruction. Of course if we had taken a picture of this patient standing we should probably have shown a much more marked kink than this.

DR. CABOT: Dr. Richardson, have you any experience of kinks when they do not dilate the pelvis?

DR. EDWARD P. RICHARDSON: I have no particular experience, but I believe that pain may be caused under those conditions.

A PHYSICIAN: Isn't there danger of having hydronephrosis when they do not operate?

DR. RICHARDSON: Yes. I think it is a question of degree. In that case we should probably have persistent symptoms not relieved by support, and further cystoscopy would show evidence of dilatation.

DR. HOLMES: Of course it is possible that when the patient is standing this kink is much more marked, and there may be some temporary dilatation at that time; when the support is put on it is brought back to where it is now and it works all right.

DR. MEANS: She had the pain when she first got up in the morning and then was free for the rest of the day. Apparently it was a very severe pain. She described it as a clutching pain in her side. It was not relieved by micturition.

DR. CABOT: Could she get relief by staying in bed?

DR. MEANS: Not after the pain came on. She could not relieve it by any means except walking around for an hour or so. She tried lying in bed in various positions without relief.

DR. CABOT: What would give such a kink as that?

DR. HOLMES: I don't know. My opinion is that the ureter is naturally a very tortuous organ. We used to see them when the radiographic catheter, which was very stiff, straightened them out. But in the last few years, since we have been using this method, ordinarily the ureter moves around a good deal. Then the X-ray may intensify a kink a good deal. If we get it in the X-ray at just the right angle it may seem to be a very sharp one. So

that X-ray evidence of a kink I do not think is very reliable unless we have clinical data to go with it or some evidence of stretching of the pelvis.

DR. MEANS: She has gone one day without the corset and did not have any return of pain, although she felt the lack of support.

DR. HOLMES: Would it be possible to get her to come down again and have another pyelogram done? It would help somewhat to prove it.

DR. MEANS: That might be worth while if she has any return of symptoms. In the meantime I believe the diagnosis is kinking of the left ureter associated with ptosis of both kidneys.

#### DIAGNOSIS

Nephroptosis, bilateral, with kinking of left ureter.

#### CASE 12103

##### ORTHOPEDIC DEPARTMENT

Miss S——, thirty-three years old, was seen as a private patient June 22, 1923. The complaints were backache and painful feet.

*Family History.* Her father was nervous. Her mother was not strong. A brother and a sister were well.

*Past History.* As a child and up to the age of eighteen she considered herself well. At nineteen she "came out" and became much run down. She went to Bermuda for a rest in the spring. While there she was very ill with what was said to be appendicitis. She was not operated upon because of the lack of a surgeon. She recovered in several weeks with the use of ice. Ever since that time her bowels had been constipated. Several "nervous breakdowns" followed. In 1912 she had a very severe tonsillitis (streptococcus throat). In 1915 her tonsils were removed for joint pains and stiffness. Five teeth were removed, all normal. Up to the present time she had been below par, nervous, underweight and tired, and had gradually developed neuritis of the arms, severe headaches, and backache. Her feet ached when she walked much, and all her joints ached at times.

*Present Illness.* Her chief complaint was backache in the lumbar spine when standing, bending, or sitting. It was better in bed. She had occasional severe general headache with nausea lasting all day. Her feet ached from walking, the pain extending up the legs from the anterior arches. Her menstruation was scanty and painful, lasting three days, regular every twenty-six days. She had tried every kind of treatment. She had some benefit from gymnasium work last year.

*Examination* showed a woman of the slender anatomic type; weight 108 pounds. The eyes, throat and teeth were normal. The tongue was



coated. There was no glandular enlargement in the neck, axillae or groins. The heart and lungs were negative. The abdomen was scaphoid, with no abdominal or retroperitoneal fat. There was tenderness over the right lower quad-

of the dorsal spine were limited, as were backward and forward bending of the lumbar spine. Hamstring spasm of both legs limited straight leg raising at seventy degrees. Both feet were pronated. The metatarsophalangeal joints were

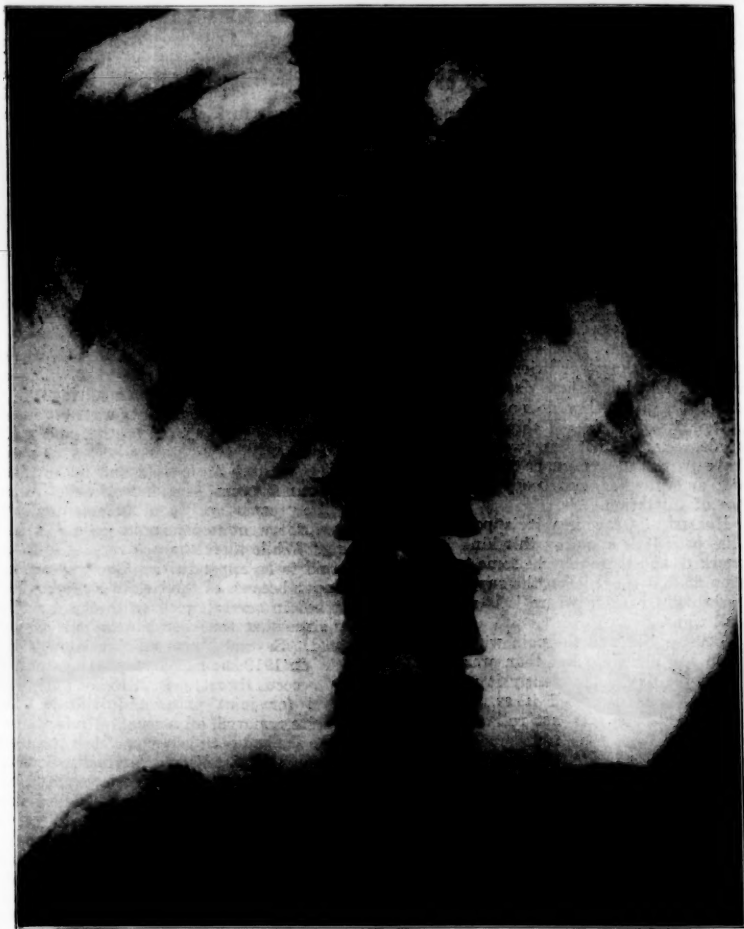


PLATE I. June 22, 1923. Hypertrophic arthritis. Spiculation about the fifth lumbar vertebra.

rant, with a feeling of fullness over the cecum. The posture standing was poor, with the head forward, the chest flat, and round shoulders. The abdomen was prominent in the lower half. There was lumbar lordosis, with tenderness over the fifth lumbar transverse processes. The motions

sore and swollen. There were calluses along the inner edge of each foot. The shoes were poor. No corset was worn.

A provisional diagnosis of congenital viscerop-tosis, faulty body mechanics, backstrain, and pronated feet with anterior arch strain was

made. X-rays of the back (see Plate I) showed beginning spiculation in the sacroiliac joints and in the bodies and articulating facets of the lumbar vertebrae, especially the fifth, with beginning density of the iliolumbar ligaments. The

were fitted. Sodium phosphate was given for the constipation.

August 30, 1923, she had gained two pounds, was eating two or three times as much as before, was much straighter, and had less pain. The

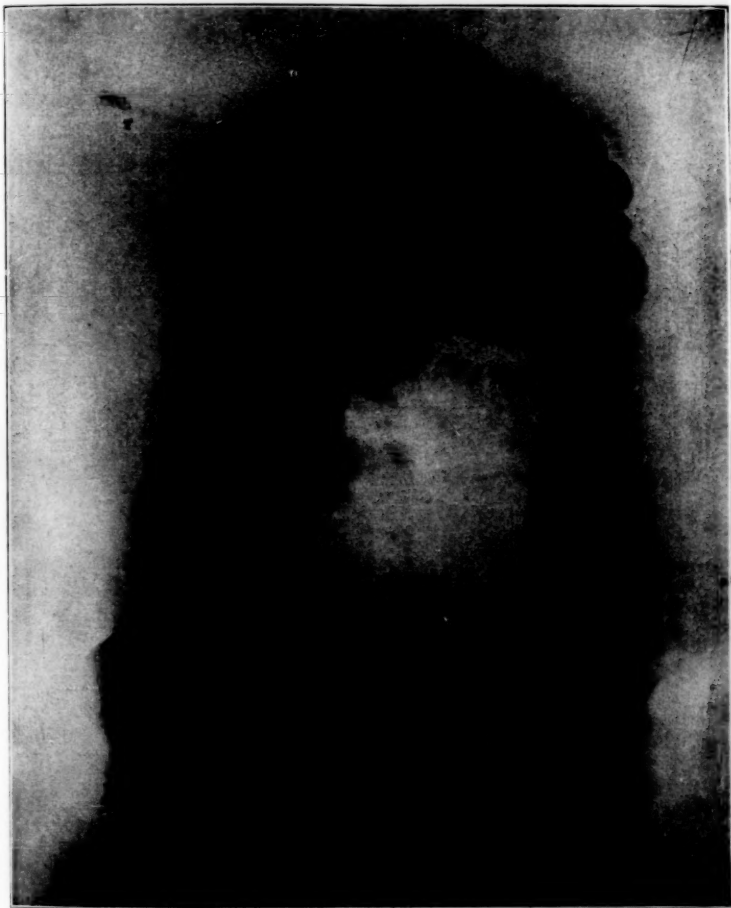


PLATE II. December 1, 1924. Pendulous dilated cecum low in the true pelvis.

same condition was seen in the low dorsal vertebrae and the feet.

A short steel back brace with corset was fitted. Corrective rest positions were planned and corrective exercises started. Anterior arch cuffs

bowels were regular. In October she had no low backache, was straighter, and had better digestion. Her feet no longer ached at night. Her back however ached at the dorsolumbar junction.

October 13, 1923, she had been seen by a phy-

sician for right sided abdominal pain with slight temperature. Her bowels had moved. There was no feeling of fullness over the cecum, but cecum, but no muscle spasm and no temperature. She was seen by a surgeon, but no operation was advised.



PLATE III. January 17, 1925. Dilated cecum adherent in the pelvis.

there was tenderness. All the joints were sore. This condition continued off and on until December 28. There was tenderness over the  
December 31, 1923, she entered the hospital for X-ray study. The leucocyte count was 6,000, the temperature 98.4°.

X-ray showed normal sinuses, a low stomach, low intestines, a dilated cecum (see plate of December 1924), no sign of the appendix. Rectal examination showed the uterus pulled over a

menstruation was normal, without pain. February 18 she had gained five pounds. She had no pain in the abdomen or joints.

She continued well in spite of her mother's



PLATE IV. January 17, 1925. Residue in cecum after bismuth enemata.

little to the right, with tenderness on the right.

Dr. Young and Dr. Balch both advised against operation, feeling the whole trouble was a dilated cecum. Irrigations, catharsis, and abdominal massage were continued until February 10, 1924, when she left the hospital entirely relieved. The joint pain had gone. The last

death and a trip in the Canadian Rockies. Riding caused pain in the cecum.

In November, 1924, she got over-tired and had return of joint pains in the arms, legs and back. Nervous fatigue caused the same reaction every time. In December she was nauseated, and had a return of the pain in the cecum

and menstrual pain. Another set of X-rays of the spine showed hypertrophic arthritis, with no increase in the year.

December 26, 1924, she entered the hospital with cecal pain. Irrigations brought away foul stools and mucus. All the joints were sore at times. February 9, 1925, she was discharged with this note: "Has been better except for the cecum, which is constantly clogged. Whenever this is so the joints are sore, especially the spine and the right knee." The foul movements had ceased. X-rays (see Plates II, III and IV) showed the same dilated cecum with probable adhesions. Castor oil gave relief. She was eighteen pounds heavier than a year ago.

In April, 1925, the stools were again foul when irrigated. Although she was better, after consultation with Dr. Young it was decided, because of the ups and downs of pain in the side and the continued joint pains, to operate and explore the right lower quadrant. May 22 X-rays showed a ballooned-out cecum, immovable, low in the pelvis. The rest of the intestines emptied well.

May 27 operation was done by Dr. Young. The cecum was found ballooned out and congested, with a good deal of venous engorgement. It was atonic, in the true pelvis, adherent to the top of the uterus and the Fallopian tube, held in the pelvis by adhesions. The ovary and the gall-bladder were normal. The appendix was a club shaped old obliterated mass. The adhesions were freed and the cecum drawn up by plication and reduced to normal size. The appendix was removed and a small stitch taken to hold the cecum out of the pelvis. June 12 she was getting up. There was no joint pain and no cecal tenderness. The bowels were regular with medicine. The basal metabolism, which before operation was +15, by July 8 was -15. Two and a half grains of thyroid was given. She continued to improve. August 14, the basal metabolism was -8. The cecum was clear. The menstruation was normal. The back and knee were better.

In October the basal metabolism was -8. January 21, 1926 it was -3, the weight 127¼. The bowels were regular with mineral oil. She had no joint pain, no nervousness, no cecal distress. Her appetite was good, and she was leading a normal life.

About her illness in Bermuda I was unable to get any data except what she could give me. She was very ill. She dates her constipation from this time. She had never been constipated before.

Whenever she had tried to do anything that required long concerted action she always has had a breakdown, and was always being blamed for "nerves".

At the time of her tonsillitis she was very sick, her whole throat was congested, and she had a great deal of trouble in eating.

Her headaches laid her up for a day or two at a time. The backache she had practically all the time. Her joint symptoms were very intermittent. She spoke of the joints simply as being lame and sore at times. The posterior arches of the feet did not bother her at all.

Menstruation was quite a factor with her, because each time it came her back would ache more and she would be laid up with her back. She had been working in a gymnasium, stretching her body and doing exercises particularly for her back, and having, I think, some osteopathic treatment.

She was very slender, had a low diaphragm, her ribs were contracted and her chest flat. The abdominal tenderness was not excessive. It was a moderate tenderness located in the region of the cecum.

The calluses showed continued long pronation of each foot.

Visceroptosis is characteristic of the slender anatomic type.

The X-ray plate (Plate I) shows beginning thickening of the iliolumbar ligaments. Spiculation has begun here; it does not show the sacroiliac joint, but at the bottom of both sacroiliac joints was the same spiculation. This region was where she had her tenderness. She had settled directly back on to her spinous processes because of her bad posture. The same condition was present in her feet, through the metatarsophalangeal joints, and through the hands. I have not the picture of her hands here, but they showed spiculation of all the joints, which was rather surprising to me in a woman of thirty-three. She is, I think, the youngest person to show a generalized hypertrophic arthritis that I have ever seen.

The treatment was planned in the first place



to relieve her pain. She was given exercises to expand her chest and bring her body up off the

#### DISCUSSION

BY LORING T. SWAIM, M. D.

I knew this patient when she was a wee youngster. She was never a stout child, but was perfectly well. At nineteen she came out, and got very tired. Whether that had anything to do with her subsequent history I am not sure, but I think it lowered her vitality. spinous processes. We made an anterior arch cuff to keep her feet from spreading, and taught her about walking on the outside instead of on the inside of her feet, because that seemed the logical thing to do to relieve the pain she was having.

The sodium phosphate was very satisfactory.

We had transferred her strain from the spine to the dorsolumbar junction simply because we had changed her posture. All the strain of her upper body was coming on her dorsal spine.

In October I could not get out to see her and asked this physician to go. He reported that there was no indication of appendicitis. She had had a generalized attack of pain such as she used to have the year before. It included the back, knees, hands, and one elbow. I had Dr. Edward L. Young see her at this time, and he felt as I did that there was no definite evidence of appendicitis. We thought it must be a cecal congestion of some kind which was causing the pain but was nothing to operate on. We wanted to find out definitely what happened in the cecum and what had become of her appendix, if she had one. The X-ray showed a big, ballooned-out cecum. I have no plates here, but they are essentially the same as the later ones which I will show. The question in my mind at that time was whether she did or did not have an appendicitis. If she had appendicitis it seemed to me we ought to go in, because after she had had this attack I went back over the history and found that previously she had had cecal pain or pain in the right side which she did not think anything of, and it had always been passed over as a part of her neurotic condition. Also, how severe it was we could not tell with her neurotic history. The only sign we had to go on was one which Dr. Young and I have thought since was very significant,—that is, that the right leg could not be straightened

out during the pain. We have seen three cases of that now, and each time we have gone in we have found practically the same pathology present,—an adhesion to the iliopsoas muscle. Dr. Young did not want to decide by himself. He asked Dr. Balch in, and we all decided not to operate, feeling that the trouble was a dilated cecum. I remember asking Dr. Balch at the time whether I could go ahead and do what I pleased with that side without danger of starting up an acute inflammatory condition. He said "Go ahead". I was afraid to do this before, because if there was appendicitis I should probably stir it up.

All that summer she had no trouble so long as she took her positions and kept her bowels clear. She had to use about twelve senna pads for that. The only thing that bothered her was riding. I have found it pretty characteristic of most of the arthritic cases that over-fatigue will bring back many of the symptoms.

With a bismuth enema we could see the position of the cecum, a big, ballooned-out cecum with a high splenic flexure. It was a very long, immovable cecum. This plate (Plate II) will show how much it could balloon out when it was really full. It was constantly tender, especially the tip. And when emptied, the thing that interested Dr. Young and myself was that it would leave a residue behind. Even when the cecum was really getting better we would still have this puddle (see Plate IV) down here at the very tip. Still we delayed.

When the leg was straightened we could see the iliopsoas muscle pull on that cecum.

This plication was done by hitching the bands together along one side where the appendix had been, and just rolling it up, and as it was sewed up the cecum came up out of the pelvis to normal position and normal size.

She had an uneventful recovery.

An interesting point is that we had had the basal metabolism done about a week before operation. It was plus fifteen. On July 8, after the operation it was minus fifteen. She was weak and tired. We gave her two and a half grains of thyroid and it acted like a tonic.

Dr. Young wants me to say, Be cautious about this operation, because he and I both feel that it is not an operation to be done without a great deal of study beforehand. There are very few

cases where it will help or should be done. We have had three cases. I have no X-rays of her intestines up to date, but we have another case done within two weeks of her operation that showed a perfectly normal cecum. It was emptying without aid, was normal in shape, in good condition, and none of the dilatation had recurred.

We feel that this operation should not be done without long study, and particularly without getting the body into a position where the cecum can come up, where there is nothing pressing it down. Dr. Young said he believed part of the after results were due to the work that had been done previously, getting chest expansion, getting the diaphragm up, giving a better circulation through abdominal exercises. The abdominal muscles were less weak and could begin to do their work quicker from the work that had been done before. He would not attempt any case of that kind unless it had had the previous training.

DR. ROY R. WHEELER: I should like to ask Dr. Swaim if he feels that he has cured her?

DR. SWAIM: I am quite sure the cecum is going to work. Her arthritis even previous to the operation had quieted down with improvement of her mechanics, so that there had not been any increase in the spiculation of the joints. I do not know whether anyone can say that he has ever cured a case of arthritis. If any arthritic gets tired he will have a relapse, because fatigue is one of the greatest causes of interference with the circulation, and circulation is one of the biggest factors in arthritis. I cannot say that the arthritis is cured. I think if she carries on as she is doing now until next spring I shall have to make her rest. But I think with care the process will not be extended, and as long as her metabolism keeps up I am sure her circulation will keep up, and as long as she uses her body properly she will not injure her back. I have not dared to take off her brace, and I am not going to until she has got further away from her trouble.

A PHYSICIAN: Do you think that possibly her cecum was a focus of infection, and when you got rid of that it stopped the arthritis?

DR. SWAIM: I do not know. I wish I did. I should like to have opened that cecum and had a culture from it. I am not at all sure that she may not have had a very severe streptococcus

infection of her throat which had disappeared. She may have swallowed a good deal of infected material from 1912 to 1915, and with a cecum which was tied down, it would make a wonderful lodging place for any bacteria that got through. I am not at all sure that they do get through, from experiments I have done. But it is not illogical to feel that she may have had a cecal infection with stasis.

A PHYSICIAN: Did she have appendicitis?

DR. SWAIM: She had a very severe inflammation at that time. It was in the right side, the appendix was obliterated, bound down and club-shaped, and would not open so that any bismuth could go in. I wish I knew that point.

A PHYSICIAN: What is the status of vaccines in arthritis?

DR. SWAIM: I have tried them. I may not use them right, but I have not had any success with them. I have tried them for the last two years. I have seen one or two cases get some improvement, I think. But even where I have known I had a focus and where I have actually got the vaccine from the infected focus, the vaccine has done no good whatever. I have seen temporary improvement, but no permanent results. I have seen people gain in weight, but I have not seen them get well, even giving it to them for a year in very small doses. I cannot see that the autogenous vaccines had any more effect than some of the stock vaccines.

A PHYSICIAN: How do you explain this drop in metabolism after the operation?

DR. SWAIM: I have been very much interested in that, and watched it in several cases, and I think that many cases after operation have a drop in metabolism. I do not know whether anyone else has any figures on this, but it was very striking in her case and in several other cases. It is very much like excessive fatigue. I think probably that plus fifteen may have been a nervous reaction before operation. She may have been keyed up, knowing that we were planning something. But since we gave her the thyroid her nervousness stopped and her general condition and circulation improved.

#### DIAGNOSIS

Hypertrophic arthritis.  
Congenital visceroptosis.  
Faulty posture.  
Dilated adherent cecum.

# THE BOSTON Medical and Surgical Journal

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## "DIVERS WEIGHTS AND DIVERS MEASURES"

ATTENTION is being called to the Metric Standards Bill (H. R. 10) introduced by Hon. Fred A. Britten, Representative from Illinois. This is one of the first bills introduced in the new Congress, and is now before the Committee on Coinage, Weights and Measures. The important points of this bill are that from and after January 1, 1935, metric weights and measures, with slight exceptions, shall be used for buying or selling goods, wares or merchandise, and for charging or collecting for their transportation. If this bill is passed by Congress it means, of course, that during the next nine years the country will gradually abandon the present so-called English system for the metric system of measurements. The liter would then become the "world quart," the meter the "world yard," and 500 grams the "world pound." Although not specifically mentioned, the centigrade system of temperature measurement would logically supplant the Fahrenheit.

The plan on which are based the decimal metric weights and measures was first proposed by James Watt, inventor of the steam engine, in 1783. France, in 1799, was the first country to adopt the metric units, and since that time practically all the countries of the world except

those of James Watt's own race have adopted it. Within the last five years Russia, Japan, Poland, Latvia, Greece, Esthonia, Lithuania, Siam and Persia have confirmed by legislative enactment their adoption of metric units, increasing the number of the world's people who are now using it to nearly 800,000,000.

The two great advantages of this system of measurement are the facility of use of a decimal system as opposed to our present illogical divisions of units, and the desirability of universal international standards, becoming more and more a necessity as world trade expands and world intercourse becomes closer. As has been pointed out by advocates of the metric system, there is a 20 per cent. difference of the pint, quart and gallon in Canada and the United States, and, counting English, Canadian and United States units, we have in active use "4 different sizes of pints, quarts and gallons; 3 different sizes of gills; many sizes of barrels; an untold number of different sizes of bushels; 3 kinds of ounces, drams and pounds; 2 different sizes of hundred-weight; 4 different tons, and 2 or 3 kinds of miles. To this anarchy of weights and measures are to be added such casuals as minims, grains, fathoms, pennyweights, pecks, links, chains, points, lines, mils, scruples, furlongs, hands, rods, poles, stones, cords and other survivals of barbaric barter."

In coinage alone the United States has led the world in adopting a decimal system, and very convenient we find it. Science, which knows no political boundaries, uses the metric system exclusively because of its need for accuracy and clarity. In medicine, as usual, we are employing standards that compromise between science and tradition, measuring sometimes in centimeters and grams and more frequently in grains and minims.

At least one large Boston hospital has from the first employed the metric system, and others are now considering its adoption. It would mean a certain amount of difficulty for a while, because those of us who are accustomed to the more picturesque historical methods would have to make our adjustments and transpose from the new to the old units before we were sure of our doses, but at least we would be quit of the troublesome fractions! The adjustments necessary in architecture, engineering and like professions we know less of, but realize that they would be many.

Nevertheless, the ultimate goal seems necessary if it can be arrived at by proper methods, and while we will always deery excessive legislation it seems that, if it is not too burdensome, the end will justify the means, short of another constitutional amendment, which Heaven forbid!

## ETHICS IN ADVERTISING

A SINGLE issue of a prominent and reputable Boston newspaper was recently found to contain the following advertisements:

1. A pill that cures constipation, biliousness, belching and acid risings in the mouth.
2. An application that relieves lumbago, neuritis, sciatica, colds and every ache and pain.
3. A preventive of tonsillitis that kills germs without injury to the delicate throat membrane.
4. An external remedy that relieves colds without dosing.
5. An ointment that positively stops any case of itching, blind, bleeding or protruding piles.
6. A headache cure.
7. An internal remedy to reduce fat.
8. A chewing gum that safely takes off fat at the rate of several pounds a week.
9. Bitters that make rich blood.
10. Pleasant little tablets that are better than calomel. (No need to question this!)
11. A complete cure of rupture without operation, after trusses had failed.
12. A safe and proven remedy for colds, grip or influenza.
13. Another fat-reducing gum.

The patent medicine has been so long with us that we are inclined to view it as an annoyance and forget that it may be a menace. Few patent medicines now contain definitely injurious substances, in all probability. The pure food and drugs act has been a great blessing in this respect, and the Harrison Act has further added to the intrinsic innocuousness of most of these remedies.

It is not through the substances themselves that their greatest harm is done, however. The chief objection to all of them is that they furnish either symptomatic or psychic relief and may, and probably do often act tragically to the disadvantage of their users by masking symptoms of grave disorders. A fire department that considered it its main duty to prevent the escape of smoke without hunting for the blaze would not long be countenanced in a really up to date community.

We are a self-dosing nation and a nation that believes what it reads, and for this very reason we have every right to feel that our newspapers, furnishing the bulk of the literature read by the public, owe it a definite duty in what they put before it. It is hard to believe that the income furnished by such advertisements is sufficient excuse for their acceptance, but such must be the case. We wonder if those who are responsible for the policies of this newspaper, knowing the damage that is done by such advertisements, would continue to publish them. If so we are again forced to the sad conclusion that money talks, and that, when money talks, all other tongues are silent.

#### TETRAETHYL LEAD

A NUMBER of months ago tetraethyl lead, as used in "anti-knock" gasoline, was arousing a

great deal of interest in the scientific and medical world on account of the possible dangers inherent in its use. Dr. Yandell Henderson of Yale University had warned against the hazards attending its employment and expressed the belief that, if all cars used it, a person on Fifth Avenue, New York, might in eight hours inhale the minimum amount of lead sometimes inducing symptoms of poisoning.

The United States Bureau of Mines had, however, investigated this product and studied its effect on animals and found, after a test period of eight months, no sign of lead poisoning.

Science now reports the findings of the special committee of the United States Public Health Service that has been investigating the problem brought up by certain alleged poisonings from the gasoline of some months ago.

Two hundred and fifty-two men were examined in Dayton and Cincinnati, Ohio, as a part of this investigation. These were all men who had to do with automobiles, some of them handling treated and others only untreated gasoline. No health differences could be found among them that could be attributed to the treated gasoline, although practically all of them eliminated lead, whether or not they were exposed to the treated fuel.

As a result of the investigation representatives of the American Federation of Labor, the United States Public Health Service and the manufacturers of ethyl gasoline are now drawing up a system of regulations to apply to its manufacture and distribution. The committee feels that the following general conclusions are justified:

(1) Drivers of cars using ethyl gasoline as a fuel and in which the concentration of tetraethyl lead was not greater than one part in 1,500 parts by volume of gasoline, showed no definite signs of lead absorption after exposures approximating two years.

(2) Employees of garages engaged in the handling and repairing of automobiles and employees of automobile service stations may show evidence of lead absorption and storage, as indicated by the lead content of the feces and the appearance of stippled cells in the blood. In garages and stations in which ethyl gasoline was used, the amount of apparent absorption and storage was somewhat increased, but the effect was slight in comparison with that shown by workers in other industries when there was a severe lead hazard and for the periods of exposures studied was not sufficient to produce detectable symptoms of lead poisoning.

(3) In the regions in which ethyl gasoline has been used to the greatest extent as a motor fuel for a period of between two and three years, no definite cases have been discovered of recognizable lead poisoning or other disease resulting from the use of ethyl gasoline.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

PARSONS, HON. HERBERT C., Massachusetts Deputy Commissioner of Probation. Member of National Committee for Mental Hygiene. Vice President of the Massachusetts Society for Mental Hygiene. The title of his paper is "Juvenile Delinquency and Probation," page 425.

MYERSON, ABRAHAM, M.D. Tufts College Medical School 1908. Professor of Neurology and Neuro-pathology, Tufts College Medical School. Member of the Massachusetts Medical Society, the American Neurological Association, the Boston Society of Psychiatry and Neurology, the American Psychiatric Association, the New England Society of Psychiatry, the Association for Research in Nervous and Mental Diseases, and the American Psychopathological Association. The title of his paper is "Responsibility—The Medical Point of View," page 427. This is a companion paper to Mr. Parsons'.

HALL, FRANCIS C., A.B., M.D. Harvard Medical School 1917. Member Massachusetts Medical Society. He writes on "Observations of a Medical Man in an Orthopaedic Clinic. I. Body Mechanics," page 432.

COUTES, WILLIAM P., A.B., M.D. Harvard Medical School 1894, F.A.C.S. Member of the Massachusetts Medical Society. Surgeon to Out Patients, Massachusetts General Hospital. Assistant Surgeon, Boston Dispensary. Instructor in Surgery, Tufts College Medical School. The title of his paper is "Pierre Fidèle Bretonneau, 1778-1862," page 440.

The Massachusetts Medical Society

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Boston Lying-In Hospital, Boston, Mass.

(Communications and questions addressed to the Clerk will be gladly received and cheerfully answered.)

PUERPERAL deaths for Massachusetts exclusive of Boston for the months of June, July and August, 1925, totalled 94. These deaths are tabulated as follows:

|   | June | July | Aug. |
|---|------|------|------|
| Lobar pneumonia.....                          | 1    |      |      |
| Cerebral hemorrhage, incomplete abortion..... | 1    |      |      |

|   |    |    |    |
|---|----|----|----|
| Abortion and miscarriage.....                     | 2  |    |    |
| Diarrhea and enteritis.....                       | 1  |    |    |
| Hyperemesis.....                                  | 1  |    |    |
| Postpartum hemorrhage.....                        | 2  |    |    |
| Postpartum hemorrhage with retained placenta..... | 1  |    |    |
| Postpartum hemorrhage with embolism.....          | 1  |    |    |
| "Puerperal" and "uterine" hemorrhage.....         | 3  |    |    |
| Premature separation of placenta.....             | 1  |    |    |
| Placenta previa.....                              | 2  | 1  |    |
| Cesarean section, intestinal obstruction.....     | 1  |    |    |
| Difficult delivery, shock.....                    | 1  | 4  |    |
| Rupture of uterus.....                            | 1  |    |    |
| Valvular heart disease.....                       | 1  |    |    |
| Acute cardiac dilatation.....                     |    |    | 1  |
| Puerperal septicemia.....                         | 12 | 9  | 10 |
| Puerperal embolism.....                           | 10 | 3  | 4  |
| Puerperal albuminuria.....                        | 5  | 4  | 10 |
| Puerperal insanity.....                           |    |    | 1  |
| Totals.....                                       | 36 | 28 | 30 |

Seven of the above deaths not classed to Cesarean section nevertheless followed this operation. In one case dying of eclampsia Cesarean section had been done; in another eclamptic death resulted from peritonitis following Cesarean. In one case pregnancy with placenta previa was diagnosed: she died of postpartum shock and hemorrhage following Cesarean. One death was reported as due to pelvis peritonitis following Cesarean (for) transverse presentation. The death from puerperal insanity followed Cesarean. Two cases died of pulmonary embolism following Cesarean section.

One case classed to albuminuria among the above deaths died of toxicemic vomiting. Two deaths from septicemia followed operation for ruptured ectopic pregnancy.

MEMBERSHIP CHANGES

JANUARY 1, 1926, TO MARCH 1, 1926

NOTE. The deaths have appeared in the columns of the JOURNAL, when reported. In the PROCEEDINGS OF THE COUNCIL (see JOURNAL of February 25, 1926, page 330) are nine resignations accepted by that body on February 3 and twelve transfers from one district to another.

WALTER L. BURRAGE, *Secretary*.

Bartley, J. J., Lawrence, now 334 Haverhill St.  
Bassow, George W., Douglas, Ariz., now has his office in the McGuire Bldg.  
Batchelder, Philip, from Boston (Suffolk) to Edge-wood, R. I. (Non-Resident List), 1884 Broad St.  
Blake, P. W., Andover, now 102 Main St.  
1926 Bovie, William T. (Honorary Member), Milton, office Cambridge, IA, Divinity Ave.  
Brainerd, John B., Brookline. Temporary address, Middlebury, Vt.  
Brainerd, Walter S., Bradford, should have "1925" after his name.  
Calderwood, Edward S., enter name in Roxbury, Local List.



Carley, F. J., North Attleborough, now 33 High St.  
 Cook, Philip H., Worcester, office now 25 Elm St.  
 Connelly, Ambrose J., from Worcester (Worcester) to Springfield (Hampden), 175 State St.  
 Cyr, E. A., Lawrence, now 81 Bradford St.  
 Dalton, Charles H., Somerville, from 476 to 434 Broadway.  
 Deacy, John J., should be Methuen, office Lawrence, 32 Lawrence St.  
 1926 Duane, William (Honorary Member), Boston, 695 Huntington Ave.  
 Edelstein, Samuel, Roxbury, office Boston, now 10 Newbury St.  
 George, L. H., Bradford, now 120 South Main St.  
 Gerould, Joseph B., North Attleborough, now 50 North Washington St.  
 Gibson, David H., enter name in Cambridge, Local List.  
 Golub, J. J., from Brooklyn, N. Y., to New York City, Mt. Sinai Hospital.  
 Grover, Joseph I., change, in Local List, from Mattapan to Dorchester, 281 Ashmont St.  
 Haire, Paul G., from Worcester (Worcester) to Malden (Middlesex South), 427A Main St.  
 Hodgdon, A. H., Dedham, change 110 Maple Place to 10 Maple Place.  
 Kable, J. D., Marlborough, from 47 Mechanic St. to 21 West Main St.  
 Kapp, Henry, enter name in Haverhill, Local List.  
 Kendrick, Thomas P., Roxbury, now office Boston, 475 Commonwealth Ave.  
 Kershaw, George H., Fall River, now 344 High St.  
 King, Nathaniel C., Campello, now office Brockton, 1150 Main St.  
 Knowlton, Florence E. H., from New York City to Sparta, Wis., State School.  
 Kraus, Dorris M. P., from Framingham (Middlesex South) to Needham (Norfolk), 1113 Great Plain Ave.  
 LaFond, D. J. A., from Gardner (Worcester North) to Worcester (Worcester), 346 Grafton St.  
 LaLiberté, E. J., Worcester, now 28 Pleasant St.  
 Lee, E. D., from Medford to Malden, 170 Pleasant St.  
 Luftig, Jacob, from Roxbury to Brookline, office Boston, 483 Beacon St.  
 Marshall, J. R., Somerville, from 25 to 20 Curtis St.  
 McCurdy, Theodore Edward Alexis, Boston, 261 West Newton St., restored by Council, February 3, 1926.  
 Melick, Joel M., Worcester, office now 25 Elm St.  
 Metcalf, Ben H., Phoenix, Ariz., now 40 Weldon Ave., Route 6.  
 Ober, Herbert C., Cambridge, to Newton, 38 Eldredge St.  
 Ober, Ralph Beverley, address is Springfield, 76 Maple St., not Monson.  
 Osgood, George E., St. Petersburg, Fla., now 2604 Fourth St.  
 O'Toole, John L., Bradford, should be 200 South Main St.  
 Reilly, Thomas F., from Boston (Suffolk) to Springfield (Hampden), 86 Oswego St.  
 St. Marie, Philip, from Pittsfield (Berkshire) to Springfield (Hampden), 49 Belmont Ave.  
 Sharp, Benjamin, Providence, R. I., from 60 Bellevue Ave. to 341 Thayer St.  
 Simmons, Edward B., Worcester, from 900 Main St. to 5 Oberlin St.  
 Spitz, J., Boston, office now 491 Commonwealth Ave.  
 Springfield Fellows who have moved their offices to 20 Maple Street:  
 Adams, W. B.  
 Carleton, Dudley  
 Cort, Parker M.  
 Davis, Ernest L.  
 Harriman, David E.  
 Horrigan, Arthur J.  
 Hosmer, Merrill E.

Jones, F. D.  
 Katz, Edward  
 Rochford, R. A.  
 Schillander, Carl A.  
 Wheel, Harry R.  
 Wilder, Winford O.

Sullivan, J. V., South Boston (Suffolk) to Fall River (Bristol South), 466 Warren St.  
 Tartakoff, Samuel, Brighton, office now Boston, 68 Bay State Rd.  
 Thomas, A. F., Titusville, Fla., now P. O. Box 784.  
 Walsh, J. Sylvester, from South Boston (Suffolk) to Arlington (Middlesex South), 206 Massachusetts Ave.  
 Wheeler, Lucia A., from Drexel Hill, Pa., to Wernersville, Pa., State Hospital.  
 Whitney, Jerome A., Blandford, temporary address: Springfield Hospital, Springfield.  
 Williams, Augusta G., France. Forwarding address, Brookline Village, Mass., P. O. Box 504.  
 Williamson, Cordelia L., from Murfreesboro, N. C. Temporary address, Boston, Care of Thomas Cook & Sons, 1167 Tremont St.  
 Zundell, S. C., from San Diego, Calif. (Non-Resident List), to Dorchester (Norfolk), 95 Washington St.

## MISCELLANY

### MEETING AT HARVARD MEDICAL SCHOOL

On Wednesday, Feb. 24th, Dr. C. MacFie Campbell addressed a meeting at the Harvard Medical School. His subject was "Human Nature."

He pointed out the importance of possessing an insight into human nature from the standpoint of the physician. An intelligent and balanced attitude regarding the problems of human nature, he considers a very essential part of the doctor's training, if he is really to understand and help his patients. The tendency is for the medical student, to lose sight of the wider integrations of the life of the individual and to focus his attention on mechanisms that can be understood in terms of physiological and bio-chemical units.

Dr. Campbell recommended to the medical student a greater interest in religion as a study of man's place in nature, his destiny and his responsibilities. He believes it is valuable for the student to have an interest in the evolution of human nature and to study the thought of primitive man. We carry primitive residuals in our nature that may come to the surface at any time, just as the appendix may give trouble although not an essential part of our anatomical structure.

There is something to be gained from a study of the lives of men whose main interest was in spiritual values or in the creation of beauty rather than in comfort and power. Reading the biographies of men of action and distinction is of great value. The student who does not read along these lines is missing a great comradeship and a source of power and personal development as well as an opportunity to gain a further insight into human nature. Dr. Campbell says it is important for the medical student to economize his time and to consider his extra-curriculum reading of major importance.

The Truesdale Hospital, Fall River, when completed by the gift of half a million dollars from Earle P. Charlton, Vice President of the Woolworth Company



New Wing of the Truesdale Hospital

The new north wing of the hospital, to be called "The Earle P. Charlton Surgery and Laboratory Building," will complete the balance of the building. There will be three stories, a basement, and a sub-basement in the new structure. While the building will be used essentially for laboratories and operating rooms, on the first and second floors there will be 20 rooms for patients. The laboratory will be equipped with the most modern surgical instru-

ments and appliances. The general architecture, interior and exterior, will be in harmony with the rest of the building. The plans also show a new power plant and laundry. The kitchen will be reconstructed and a new dining room for nurses will be built. The addition will be fireproof. Mr. Charlton in giving the gift desired to have the wing constructed and equipped on the basis of the most modern developments and scientific principles.

#### NEW SCHOOL OF TROPICAL MEDICINE

DR. ROBERT A. LAMBERT of New York, as announced by the *New York Times*, will leave next month for Porto Rico to take charge of the School of Tropical Medicine now being established there by Columbia University in coöperation with the University of Porto Rico. Chancellor Thomas E. Benner of the University of Porto Rico is now in this country to confer with the Columbia authorities on organization plans, the ultimate aim being to establish a great Pan-American Medical Centre at Porto Rico for coöperation between North and South America in the conquest of disease.

#### THE COMMONHEALTH

VOLUME 12, No. 4, of the *Commonwealth*, the quarterly publication of the Massachusetts Department of Public Health, is devoted to a discussion of the communicable diseases. Dr. George H. Bigelow, Commissioner of Public Health, contributes the leading article under the title "Is There Hope of Controlling Communicable Disease?" Every case of communicable disease requires three factors, (1) the infecting organism, (2) the susceptible individual, and (3) contact between the two. Immunizing the susceptible individual affords at pres-

ent the most promising line of attack, and if the people so will it, smallpox, diphtheria and typhoid fever will disappear completely. Other contributions include a consideration of diphtheria by Dr. Edwin H. Place, scarlet fever by Benjamin White, Ph.D., vaccination by Dr. Wolfert G. Webber, rabies by Dr. Paul R. Withington, gonorrhoea and syphilis by Dr. Webber, the part of state and local health authorities in the control of communicable diseases by Dr. L. A. Jones, and the place of the school in prophylaxis by Dr. Merrill Champion.

#### MEDICAL RESEARCH BEQUEST

UNDER his will, recently published, Mr. William Frank Coleclough, M.A., M.D., of Cherry Hayes, Sidmouth, Devon, bequeathed his body to Guy's Hospital for purposes of medical research in the following terms:—

"I desire that my body shall be sent free of charge and expense to the Pathological Department of Guy's Hospital, for the purpose of making all necessary pathological investigations, as at the age of 9 years I was trephined for middle meningeal hæmorrhage (right side) and possibly my skull and brain may be of interest for the museum, but if used for that purpose my name shall not be set down."

He gave £50 to the Pathological Department for the payment of fees and for the pathologist who does the work.

After these investigations are completed his remains are to be delivered over to the dissecting room of the hospital.

He left £200 to Guy's; £250, his microscope, and instruments to Sidmouth Cottage Hospital; his medical books to Devon and Exeter Medico-Chirurgical Society; and legacies to his servants.—*London Times*.

### RECENT DEATH

**GARLAND**—DR. GEORGE MINOT GARLAND died at his home in Boston, March 2, 1926, at the age of 77.

He was born at Meredith Bridge, N. H., October 14, 1848, was graduated at Harvard Medical School in 1874, was assistant in physiology, Harvard Medical School, 1877-1881, and assistant and instructor in clinical medicine in the same from the last date until 1892 while he was physician to out-patients at the Massachusetts General Hospital and professor of thoracic diseases at the University of Vermont. He wrote "Some Experiments upon the Curved Line of Dulness with Pleuritic Effusions," *Boston Medical and Surgical Journal*, September 17, 1874, and "The Effect of Respiratory Movements on the Pulmonary Circulation," in the *Journal of Physiology*, 1879, Vol. II, No. 1.

He was a member of the Massachusetts Medical Society, lived on Newbury Street, and had a large private practice for many years.

He is survived by his widow, who was Charlotte S. Donald of Andover, and by two daughters.

### OBITUARIES

#### ALBERT HENRY TUTTLE, M.D.

DR. ALBERT HENRY TUTTLE, died at his home in Brookline, March 1, 1926, at the age of 64. He was born in South Boston, August 13, 1861, the son of Joel White and Adelia Melissa Palmer Tuttle. After a training at the Boston English High School he entered the Lawrence Scientific School, taking the natural history course and was granted the S.B. degree in 1883 and three years later the M.D. from Harvard. The winter of 1886-1887 was spent in Vienna in the pursuit of advanced courses in medicine. On his return he began practice in Cambridge; was instructor in Entomology at the Bussey Institution and then lectured on the theory and practice of surgery at the Boston College of Physicians and Surgeons. In 1893 Dr. Tuttle became surgeon to St. Omer's Hospital, the next year giving up general practice and devoting himself exclusively to surgery. He built a private hospital on Charles River Road, Cambridge, in 1895 and managed it for a series of years, while having an office in Boston.

Among his memberships Dr. Tuttle numbered the American Medical Association, Massachusetts Medical Society, Cambridge Medical Improvement Society, Boston Society of Natural

History and the American Ornithological Society.

He published many articles in the medical press after his initial paper in the *Proceedings of the American Academy of Arts and Sciences*, in 1883, on "The Relation of the External Meatus, Tympanium and Eustachian Tube to the First Visceral Cleft." In the *Annals of Gynecology and Paediatrics*, Sept. 1, 1895, he had an article on "Total Hysterectomy by a New Vagino-Abdominal Method," and in 1898, one on "Notes on Abdominal Surgery, With Report on Cases."

Dr. Tuttle was an accomplished artist illustrating his articles himself. In the *Medical Times and Register*, Phila., 1900, he published a paper with the title, "A Surgeon's View of the Value of Drawing to His Profession."

He married Margaret Priscilla Davis June 5, 1889. They had two children, a daughter, who went to Radcliffe, and a son, Albert Edward Tuttle, a graduate of the Institute of Technology.

#### JOHN HAMMOND BLODGETT, M.D.

DR. JOHN HAMMOND BLODGETT, a Fellow of the Massachusetts Medical Society, died at his home in Boston, February 18, 1926, at the age of fifty three. He was born in Windham, Connecticut, May 10, 1872, and received his early education there. His name was originally Williams, but after coming to Boston as a young man and working with Dr. A. N. Blodgett (M.D. Harvard, 1871), he was adopted, at the age of eighteen, by Dr. Blodgett and his name changed from Williams to Blodgett. After a regular course at the Harvard Medical School, he received the degree of M.D. in 1897. He soon showed a decided fondness for laryngology and offered himself as a volunteer assistant in the throat department of the Boston Dispensary, receiving an official appointment as assistant in 1904, a position which he held for seven years. Another opportunity presented itself to him, at the Boston City Hospital, where he served as assistant to the surgeon for diseases of the nose and throat from 1907 to 1919, the last seven years of this term being after the merger of the throat and ear departments.

At the Eye and Ear Infirmary Dr. Blodgett was appointed aural clinical assistant in 1909, advancing several years later to the post of assistant aural surgeon; and a few months before his death he was given the newly created position of associate surgeon in otolaryngology in recognition of his faithful services. In addition to this arduous work at the Infirmary, he was appointed assistant in the laryngological department of the Massachusetts General Hospital and instructor in laryngology at the Harvard Medical School. He was entrusted with the intensive training of medical men who were

being fitted to serve as laryngologists on their arrival in France, where the war had already shown the urgent need of these specially trained doctors. After the war was over, his teaching had to do with the students and graduates in the Medical School. This work was followed by Dr. Blodgett with great thoroughness and enthusiasm, and as an instructor he was very popular with the students.

Dr. Blodgett was eminently fitted for his chosen field of practice; a long, varied apprenticeship in large clinics for diseases of the nose and throat, where operative and educational opportunities were almost unlimited, accompanied and followed by work in similar clinics in diseases of the ear, gave him a broad, sound basis for his large private practice. He was modest, conscientious, thorough, painstaking, and a good operator, to whom his patients were much attached, especially the sufferers from chronic deafness, who appreciated the value of his patient, sympathetic and encouraging treatment. Of literary work he did practically nothing, his clinical duties claiming nearly all his time. For the last five years of his life he was a very efficient secretary of the New England Otological and Rhinological Society. He was a member of the American Medical Association, the Boston Medical Library and several social clubs, the Harvard and the University Clubs the ones he most frequented. He was also a past master of the Revere Lodge of Masons and had served as lodge treasurer.

After a number of months illness, a pernicious anaemia was demonstrated early in the summer of 1925, the course of which was not modified by a gall bladder operation, his end coming February 18, 1926.

Dr. Blodgett never married.

## CORRESPONDENCE

ARCHBISHOP WARHAM TO ERASMUS, CONCERNING THE LATTER'S ATTACK OF THE STONE

Mr. Editor:

The following letter from the Archbishop of Canterbury to Erasmus was written circa 1513, while the latter was lecturing at Cambridge University. It appears in Froude's "Life and Letters" of the great scholar, which gives such a wonderful light on the times just before the Reformation. Froude tells us that Erasmus was on his way back to the University, and though he escaped plundering he experienced a fright. He ran low on his favorite Greek wine, apparently an absolute necessity to his well being, but a fresh supply was brought up. "The carriers found out its quality, drank half of it, and filled up the barrel with water. . . . When January came and the cold weather with it, he had an attack of stone, brought on by the beer and the water in the wine."

The Archbishop writes to Erasmus:

"What business have you with such a superfluous load as stones in your small body, or what do you suppose to build *super hanc petram*? Stones are heavy carriage, as I know to my cost, when I want them for building purposes. I presume you do not

contemplate building a palace, so have them carted away, and I send you ten angels to help you to rid yourself of the burden. Gold is a good medicine. Use it freely and recover your health. I would give you a great deal more to set you up again. You have work to do and more books to edit, so get well and do it, and do not cheat us of our hopes."

Very truly yours,

WM. PEARCE COUES, M.D.

February 27, 1926.

## SMALLPOX VS. VACCINATION

Mr. Editor:

Last summer, in defending Dr. Parrish, Health Officer of Los Angeles, California, from the charge made by the *Christian Science Monitor* that he had said there was no need of vaccination in that city, I expressed surprise at his optimism in speaking of the forty cases of smallpox that did exist as nothing unusual and not suggestive of an epidemic.

I notice that in the three weeks, February 1 to February 21, there have been reported to his office 255 cases with 49 deaths, one death to every five cases. I wonder if this means an epidemic to Dr. Parrish and whether a more pessimistic attitude in the presence of 40 cases some months ago with an aggressive campaign of vaccination might have possibly prevented the February record.

I notice again that Mississippi has passed a compulsory school vaccination law. The country is beginning to sit up and take notice.

SAMUEL B. WOODWARD.

## CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING  
FEBRUARY 27, 1926

|                             |     |                      |    |
|-----------------------------|-----|----------------------|----|
| Diphtheria                  | 56  | German measles       | 22 |
| Last week                   | 56  | Influenza            | 22 |
| Diphtheria bacilli carriers | 16  | Mumps                | 8  |
| Whooping cough              | 77  | Paratyphoid fever    | 1  |
| Last week                   | 72  | Pneumonia, lobar     | 46 |
| Scarlet fever               | 86  | Septic sore throat   | 1  |
| Last week                   | 91  | Tuberculosis, pulmo- |    |
| Measles                     | 535 | nary                 | 38 |
| Last week                   | 787 | Tuberculosis, other  |    |
| Bronchopneumonia            | 58  | forms                | 1  |
| Chickenpox                  | 79  | Chancroid            | 1  |
| Conjunctivitis inf.         | 15  | Gonorrhea            | 4  |
| Encephalitis epid.          | 1   | Syphilis             | 9  |

## NEWS ITEMS

**TOUR OF MEXICO**—It may be of interest to members of the Society planning to attend the American Medical Association meeting in Dallas to know that a tour of Old Mexico is being planned by the Frank Reedy Travel Service, Adolphus Hotel, Dallas.

**TUFTS MEDICAL SCHOOL**—Dr. Rushmore and Dr. Painter attended the meeting of the Educational Council of the American Medical Association which was held in Chicago, February 15 to 18.

## NOTICES

**NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE**

Announcement has been made by Surgeon-General Cumming that on March 15, 1926, the United States Public Health Service will conduct examinations of

candidates for entrance into the Regular Corps of the United States Public Health Service. These examinations will be held at Washington, D. C., Chicago, Ill., New Orleans, La., and San Francisco, Calif.

Applicants must pass satisfactorily oral, written and clinical tests before a board of medical officers and must be examined physically. They must have been graduated in medicine from some reputable medical college, have had one year's hospital experience or two years' professional practice, and must be not less than 23 nor more than 32 years of age.

Candidates who successfully pass the requirements will be recommended for appointment by the President with the advice and consent of the Senate in the Regular Corps of the Public Health Service.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, United States Public Health Service, Washington, D. C.

#### UNITED STATES CIVIL SERVICE EXAMINATIONS

Junior Medical Officer  
Assistant Medical Officer  
Associate Medical Officer  
Medical Officer  
Senior Medical Officer

Applications will be rated as received until June 30, 1926.

The United States Civil Service Commission announces open competitive examinations under the above titles for filling vacancies occurring in the Federal classified civil service throughout the United States, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

**Salary and promotion.**—For positions in the Departmental Service, Washington, D. C., the entrance salaries are: "Junior medical officer, \$1,860 a year; assistant medical officer, \$2,400 a year; associate medical officer, \$3,000 a year; medical officer, \$3,800 a year; and senior medical officer, \$5,200 a year. After the probational period of six months required by the civil service act and rules advancement in pay may be made without change in assignment up to \$2,400 a year for junior medical officer, \$3,000 a year for assistant medical officer, \$3,600 a year for associate medical officer, \$5,000 a year for medical officer, and \$6,000 a year for senior medical officer. Promotion from grade to grade may be made in accordance with the civil-service rules as vacancies occur, provided the employees possess the qualifications deemed necessary for the corresponding advance in duties and responsibilities.

The salaries and conditions of employment in various branches of the field service follow. The salaries indicated are for full-time duty; for part-time duty the compensation is determined by the services rendered.

**Indian Service.**—The entrance salary for physician in the Indian Service ranges from \$1,860 to \$2,400 a year (usually \$1,860), with quarters, heat, and light.

**Public Health Service.**—The entrance salary for assistant medical officer, Public Health Service, is \$2,400 to \$3,000, and for associate medical officer is \$3,000 to \$3,600. *At least one year's experience subsequent to graduation is required.*

**Coast and Geodetic Survey.**—The entrance salary for surgeon in the Coast and Geodetic Survey is \$2,100 a year, with allowance for subsistence at \$1.25 per diem.

**Panama Canal.**—The entrance salary for physician, Panama Canal Service, is \$225 a month; promotion may be made in steps of \$8.33 up to a maximum of \$366.67 a month, and to higher rates for special positions. The salary begins on the date of sailing for

the Isthmus. *Applicants must have had at least one year's experience subsequent to graduation.*

**Veterans' Bureau, Field Service.**—Positions of physician and medical examiner for full-time duty; interne, entrance salary \$1,200 a year, with quarters, subsistence, and laundry; Junior Medical Officer, entrance salary \$1,860 a year. (These positions will be filled from the Junior Medical Officer register.) The entrance salary for Assistant Medical Officer is \$2,400 a year, for Associate Medical Officer \$3,300 a year, for Medical Officer \$3,800 a year, and for Senior Medical Officer \$5,200 a year. After the completion of the probational period of six months required by the civil-service act and rules advancement in pay may be made without change in designation up to \$2,400 a year for Junior Medical Officer, up to \$3,000 a year for Assistant Medical Officer, up to \$3,900 a year for Associate Medical Officer, up to \$5,000 a year for Medical Officer, and up to \$6,000 a year for Senior Medical Officer. The salaries indicated are as stated without any other allowance. The position of Senior Medical Officer is rarely or never certified, as promotions to a higher grade are made from physicians already on duty when suitably qualified personnel are available. Promotions to a higher grade or increase of pay within the grade or to the maximum of the grade will be made only when the position occupied justifies the grade and work accomplished demonstrates ability. Appointments for part-time duty will be made at salaries to be determined by the services rendered. Persons appointed as interne, after satisfactorily completing a year's service within the Veterans' Bureau, may, if desirous of remaining in the service of the Bureau, qualify as Assistant Medical Officer at a salary ranging from \$2,400 to \$3,000.

**Certification.**—In filling vacancies in positions in the field service ordinarily certification will be made of the highest eligibles on the appropriate register who have signified willingness to accept appointment, at the salary offered, in the locality where the vacancy exists; but upon the request of the appointing officer certification may be made of the highest eligibles residing in the State (or States) nearest the place of the vacancy. If appointees are to devote only a part of their time to Government work or are to be employed to act as consulting specialists, preference may be given to eligibles residing in the city or at the place at which the appointee is to be employed or in the immediate vicinity thereof.

**Optional branches.**—The eligibles resulting from these examinations will be placed on registers and certified according to their qualifications in the branches listed below. *Applicants must indicate clearly in their applications the number and title of the branches of medicine or surgery and the grade for which they desire to qualify.*

For full particulars apply to U. S. Civil Service Commission, Washington, D. C.

### REPORTS AND NOTICES OF MEETINGS

#### THE CHILDREN'S HOSPITAL

THE visiting staff of the Children's Hospital will hold a clinical meeting in the Amphitheatre of the Hospital, Friday, March 12th, 1926, at 4:30 P. M. Demonstration of cases. Physicians are cordially invited to attend.

#### BOSTON MEDICAL HISTORY CLUB

THE next meeting will take place at the Boston Medical Library, 8 The Fenway, Monday, March 15, 1926, at 8:15 P. M.



Programme:

Dr. Charles F. Painter, "Shamanism." Dr. F. B. Lund, "The Anatomy and Physiology in Plato's 'Timaeus'." Dr. George Sarton, "The Time of the Two Hippocrates."

BOSTON CITY HOSPITAL

STAFF CLINICAL MEETING

CHEEVER Surgical Amphitheatre, Thursday, March 18, 1926, at 4 P. M.

Demonstration of cases by members of the Medical and Surgical Staff.

Discussion of the cases invited.

Physicians, Medical Students and Nurses invited.

JOHN J. DOWLING, *Superintendent.*

FRANKLIN DISTRICT SOCIETY

THE March meeting of the Franklin District Medical Society was held at the Weldon, on Tuesday, March 9, 1926, at 11 A. M.

PROGRAM

The Shriners Hospital for Crippled Children, Dr. R. N. Hatt.

Dr. Hatt is Surgeon-in-Chief of the hospital which is the New England unit of Shriners hospitals.

NORTH SHORE MEDICAL FRATERNITY

DR. BERNARD GOLDBERG of Boston addressed the members of the North Shore Medical Fraternity at their January meeting, his subject, "Therapy in Heart Disease."

Dr. E. Granville Crabtree of Boston addressed the members of the Fraternity at their February meeting, his subject being "Some of the Common Conditions in Urology as seen by the General Practitioner."

On March 16, Dr. Richard Miller, Assistant Visiting Surgeon to the Massachusetts General Hospital, will address the members of the Fraternity on "Acute Surgical Conditions of the Abdomen."

MEETING OF THE HARVARD MEDICAL SOCIETY

THE regular meeting of the Harvard Medical Society was held at the Peter Bent Brigham Hospital on Tuesday evening, Feb. 23rd.

Two cases were demonstrated. The first was a man of fifty-one years of age with atelectasis of the base of the right lung. Four years before entry to the hospital he began to have a choking sensation on swallowing. Recently he developed a cough with blood streaked sputum and difficulty in breathing. He lost about 30 pounds in weight during the past two years.

His temperature and white blood cell count were found elevated. The only physical findings of significance were slight dullness and diminished breath sounds at the base of the right lung. The X-ray showed atelectasis at the right base. Bronchoscopic examination showed complete obstruction of the right lower bronchus. The X-ray picture following lepoidal injection showed failure of filling of the bronchi in the base of the right lung. Under the fluoroscope, the right side of the diaphragm moved up as the left side moved down during inspiration. This is called the "paradoxical" movement of the diaphragm. The diagnosis was obstruction in the bronchus probably due to neoplasm.

The second patient shown was a boy aged thirteen. He entered the hospital with pain, swelling, and redness of the left ankle. Two weeks before he had blistered his left heel while skating. A week later the inflammation of the ankle was noticed. The diagnosis of rheumatic fever was considered as he had a loud blowing systolic murmur and a questionable history of a previous attack. Later the diagnosis of cellulitis was made. The process extended and involved the region of the knee. The temperature remained high although both areas were drained and Dakinized. Further examination revealed an erosion of the lower end of the tibia, a good deal of periostitis and a few drops of pus in the marrow cavity. A similar condition was found in the upper end of the bone. Shortly after this, he developed tenderness over the lower end of the femur. The X-ray showed erosion of the bone. A large abscess cavity was opened in the popliteal space. There was also a little pus in the marrow cavity of the femur. His temperature subsided after this drainage. Pure cultures of staphylococcus aureus were obtained from the pus. The blood cultures had ten colonies of the same organism per cubic centimeter, but the blood became free of organisms after opening the bone. The question arose in this case as to which was primary, the cellulitis or the osteomyelitis. Clinically it appeared that the osteomyelitis was an extension to the bone, following the cellulitis. If so, this would be very unusual. Either the infection began in the soft parts and later entered the bone travelling up the leg or it was first a general infection and settled in three adjacent parts of the same leg, which would also be an unusual coincidence.

Dr. D. J. MacPherson addressed the meeting on his recent experiences in the neurological clinics in Europe. He told in a very interesting way about the various hospitals he had visited and the personnel of their staffs. He spent some time at the National Hospital in London, also visited the University Hospital. From London he went to Paris, then to Vienna, Mun-

ich, Berlin, Amsterdam and Italy. Finally he revisited Paris and London. He described the clinical work in the hospitals and told of some rather surprising differences in the operating room technique from that used in American hospitals.

Dr. Tracy J. Putnam told of his experimental work in neurology at Amsterdam on the optic pathways and gave a very interesting account of the history of the investigations leading up to the establishment and proof of the theory of the projection of the visual field in the occipital cortex.

About 130 years ago an interest was aroused in localization of brain functions by phrenology. Nothing of an experimental nature on this problem was done until the middle of the 19th century. Then Munk in Berlin, by extirpating various parts of the cortex in animals, found that blindness could be produced by extirpation of the occipital lobes. In 1854 Panizza noted atrophy of these lobes in cases of long standing blindness. Von Monakow later found atrophy in the corpus geniculatum externum after extirpation as done by Munk. His work was followed by that of Henschen a Swedish investigator. He studied enormous series of sections from pathological cases, tracing out the pathways by the degenerated fibres. His first volume on the subject of localization of brain function appeared in 1893. Six or seven volumes have been published since and he is still working on the problem. He predicted that the cortex of the calcarine fissure was the visual centre. He also confirmed the observation of an American investigator that the lower part of the retina was connected with the lower area of the cortex. Von Monakow believed that Henschen was wrong and that there was no definite projection of the optic centres. The controversy on this point was carried on for years with no victory for either side until Minkowski came to Zurich to work with Monakow. He noted that definitely localized lesions in the calcarine cortex produced definitely localized atrophy in the corpus geniculatum. This was really a point in favor of Henschen's theory. Another Swedish investigator confirmed these findings from a study of cases of optic neuritis. With loss of macular vision there was degeneration in the posterior part of the geniculate body and in the posterior part of the chiasma. He found plenty of evidence of an exact projection. Other workers obtained the same results. Wounds in the upper part of the occipital lobe gave a lower hemianopsia. Those in the posterior part of the lobe gave macular defects. The Amsterdam investigators demonstrated exact retinal projection from the external geniculate body.

The results of all these investigations established the theory that there is a projection of

the visual fields in the cortex and that the upper half of the retina is represented in the upper half of the optic radiation and in the upper half of the cortex and the other parts of the retina are represented in the radiation and cortex in a corresponding manner.

## NEW ENGLAND PEDIATRIC SOCIETY

THE ninety-sixth meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, March 12, 1926, at 8:15 P. M.

The following papers will be read:

I. A Synoptic Account of the More General Aspects of Tuberculosis in Children, Allan S. Krause, M.D., Baltimore.

II. The Value of the Preventorium in Tuberculosis Work, Walter A. Griffin, M.D., Sharon. Light refreshments will be served after the meeting.

JOHN LOVETT MORSE, M.D., *President*.  
JOSEPH GARLAND, M.D., *Secretary*.

### SOCIETY MEETINGS

#### DISTRICT MEDICAL SOCIETIES

##### Essex South District Medical Society

Thursday, May 6—Censors meet at Salem Hospital, 3:30 P. M.  
Tuesday, May 11—The Tavern, Gloucester. Annual meeting. Speaker to be announced.

##### Essex North District Medical Society

May 12, 1926—The annual meeting at the Anna Jaques Hospital, Newburyport.

##### Middlesex East District Society

April 14—At the Harvard Club at 6:30 P. M. Address by Dr. William E. Ladd; subject, "Kidney Affections in Childhood."

May—Annual meeting, Colonial Inn, North Reading. Subject and speaker to be announced.

##### Suffolk District Medical Society

March 31—At 8:15 P. M. Medical Section. "Some Experiments in Group Physical Examination," Dr. Roger I. Lee.

April 28—At 8:15 P. M. Annual meeting. Election of officers. "Some Diagnostic, Prognostic and Therapeutic Aspects of Disorders of the Blood," Drs. George R. Minot, Cyrus C. Sturges and Raphael Isaacs.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

## BOOK REVIEW

*Handbook of Obstetrics.* By A. DÖDERLEIN, Munich. Munich: J. F. Bergmann, 1924.

This second volume of the colossal "handbook" of obstetrics, edited by Döderlein, is devoted to the pathology of pregnancy, by Küstner and Seitz; extrauterine pregnancy, by Veit and Weber; and the pathology of labor, by Zweifel and Baisch. Each of these divisions is an exhaustive monograph, and is copiously illustrated, there being 213 cuts in the whole volume. The first volume has already been favorably reviewed in the JOURNAL; and the second is to be followed by a third, and by a supplement devoted to progress made since the work was begun.